

TABLE OF CONTENTS

PARAGRAPH	PAGE
1. PURPOSE	01
2. PREREQUISITES	01
2.1 PROGRAM PREREQUISITES	
2.2 EQUIPMENT PREREQUISITES	
3. USE PROCEDURE	01
3.1 OPERATING PROCEDURE	
3.2 SELECTING	
3.3 SELECTING OPTIONS AND EXECUTING PROGRAM	
3.4 MONITOR PROGRAM CONTROL	
3.5 TERMINATING PROCEDURES	
4. PRINTOUTS.	02
5. COMMENTS	03
5.1 TEST NO. 1 (PUNCH TEST)	
5.2 TEST NO. 2 (READER TEST)	
5.3 TEST NO. 3 (PUNCH/READ/COMPARE TEST)	
5.4 TEST NO. 4 (REPRODUCE-TAPES TEST)	
5.5 TEST NO. 5 (PUNCH BIT SWS TEST)	
5.6 MONITOR ROUTINES REQUESTED BY PROGRAM	
6. APPENDIX	04
6.1 EDIT	
6.2 SAMPLE TAPE	

1. PURPOSE

THE FUNCTION TEST IS DESIGNED (1) TO TEST FOR PROPER OPERATION OF THE PAPER-TAPE STATUS INDICATORS AND (2) TO TEST FOR ACCURATE DATA HANDLING BY THE PAPER-TAPE READER AND PAPER-TAPE PUNCH WHEN OVERLAPPED WITH OTHER ELEMENTS OF THE 1800 SYSTEM. THIS TAPE MAY ALSO BE USED TO REPRODUCE TAPES.

2. PREREQUISITES

2.1 PROGRAM PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 741 STORAGE WORDS.

2.2 EQUIPMENT PREREQUISITES

A. PAPER-TAPE READER AND/OR PAPER-TAPE PUNCH.

3. USE PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. CLEAR STORAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS, IF DESIRED
5. SELECT PROGRAM OPTIONS, IF NEEDED.

TABLE 0 PROGRAM CONTROL FUNCTION
TABLE 1 ROUTINE SELECT FUNCTION
TABLE 3 DATA ENTRY FUNCTION

6. INSTRUCT MONITOR TO EXECUTE

TABLE 0 CONTROL FUNCTION

*****	1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1.
• SENSE/PROGRAM •	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
• 0 1 2 3 4 5 6 7 •	3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
•	4. PRESS CONSOLE INTERRUPT.
• 0 0 0 0 0 1 0 0 •	

• DATA ENTRY SWITCHES •	• DESCRIPTION
• 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	
•	
•	1.....REALIGN PAPER TAPE IN READER
•	1.....MANUAL TAPE ALIGNMENT IN READER
•	

TABLE 1 ROUTINE SELECT FUNCTION

*****	1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1.
• SENSE/PROGRAM •	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
• 0 1 2 3 4 5 6 7 •	3. SET DESIRED ROUTINE NUMBER IN DATA ENTRY SWITCHES 0-15.
•	4. PRESS CONSOLE INTERRUPT.
• 0 1 0 0 0 1 0 0 •	

• DATA ENTRY SWITCHES •	• DESCRIPTION
• 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	
•	
•	0 0 1 ROUTINE 1 PUNCH
•	0 1 0 ROUTINE 2 READ
•	0 1 1 ROUTINE 3 READ-PUNCH-COMPARE
•	1 0 0 ROUTINE 4 REPRODUCE PAPER TAPE
•	1 0 1 ROUTINE 5 PUNCH DATA (TABLE 3)
•	0 0 0 EXIT FROM RTN 4 OR 5 AND RESTART
•	

TABLE 3 DATA ENTRY FUNCTION

*****	1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1.
• SENSE/PROGRAM •	2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
• 0 1 2 3 4 5 6 7 •	3. SET DESIRED PUNCH DATA IN DATA ENTRY SWITCHES 0-15.
•	4. PRESS CONSOLE INTERRUPT.
• 1 1 0 0 0 1 0 0 •	NOTE -- EACH HALF WORD INCLUDES TAPE CHANNELS 8-1
•	RESPECTIVELY.

•	
• DATA ENTRY SWITCHES •	• DESCRIPTION •
• 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	
•	
• X X X X X X X X X	ONE DATA WORD TO BE PUNCHED
•	
• X X X X X X X X	ALTERNATE DATA WORD TO BE PUNCHED
•	

3.3 PROGRAM HALTS

THIS PROGRAM HAS NO HALTS.

3.4 PROGRAM TERMINATION

A. STANDARD MONITOR TERMINATION

B. PROGRAM CONTROL FUNCTION

TEST 4 AND 5 ARE NOT NORMALLY RUN IN SEQUENCE WITH TESTS AND, THEREFORE, WILL NOT TERMINATE. THE PROGRAM WILL NORMALLY TERMINATE AFTER ROUTINE 3 HAS BEEN EXECUTED.

4. PRINTOUTS

4.1 STATUS MESSAGES

PIO MID RID RAD MODIFIR'S

0400 A001 000X AFED

THE PAPER TAPE TEST RECORD IS ASSUMED TO BE PROPERLY ALIGNED IN THE READER AT THIS TIME. THIS MESSAGE IS RECEIVED ONLY AFTER OPERATOR SPECIFICATION OF REALIGN TAPE OPTION.

4.2 ERROR PRINTOUTS

PIO MID RID RAD WAS S/R
0400 E001 000X XXXX XXXX 0X00

OSW ERROR AFTER READER-CONTROL COMMAND

0400 E002 0C0X XXXX XXXX 0X00

OSW ERROR AFTER PUNCH COMMAND

0400 E003 000X XXXX XXXX 0F00

OSW ERROR AFTER READER-CONTROL AND PUNCH COMMANDS

0400 E004 000X XXXX XXXX CX00

OSW ERROR WHEN CHECKING FOR READER-READY

DATE 28FEB66 01MAY66
EC NO. 415120 415120A

PROG ID 0804-
PAGE 2

0400 E005 000X XXXX XXXX 0X00

OSW ERROR WHEN CHECKING FOR PUNCH-READY

0400 E006 000X XXXX XXXX 4D00

READER SERVICE-REQUEST OSW ERROR

0400 E007 0D0X XXXX XXXX 1000

PUNCH SERVICE-REQUEST OSW ERROR

0400 E008 000X XXXX XXXX 5000

OSW ERROR WHEN PUNCH AND READER INTERRUPTS RECEIVED AT SAME TIME

0400 E009 000X XXXX XXXX X000

OSW ERROR WHEN FIRST INTERRUPT WAS RECEIVED. AT THIS TIME BOTH THE READER AND THE PUNCH ARE BEING RUN UNDER RACE CONDITIONS. THE OSW FOR THE DEVICE THAT INTERRUPTS FIRST IS ANALYZED FIRST. ANY ERROR WILL BE PRINTED AS AN E009. SIMILARLY FOR THE SECOND INTERRUPT, ANY ERROR WILL BE PRINTED AS E010.

0400 E010 000X XXXX XXXX X000

OSW ERROR WHEN FIRST INTERRUPT WAS RECEIVED. AT THIS TIME BOTH THE READER AND THE PUNCH ARE BEING RUN UNDER RACE CONDITIONS. THE OSW FOR THE DEVICE THAT INTERRUPTS FIRST IS ANALYZED FIRST. ANY ERROR WILL BE PRINTED AS AN E009. SIMILARLY FOR THE SECOND INTERRUPT, ANY ERROR WILL BE PRINTED AS E010.

0400 E011 000X XXXX XXXX 0X00

NO READER INTERRUPT RECEIVED. (LAST OSW SENSED IMMEDIATELY AFTER READER-CONTROL COMMAND)

0400 E012 000X XXXX XXXX 0X00

NO PUNCH INTERRUPT RECEIVED (LAST OSW SENSED IMMEDIATELY AFTER READER-CONTROL COMMAND)

0400 E013 000X XXXX XXXX 0F00

NO PUNCH OR READER INTERRUPT (LAST OSW SENSED IMMEDIATELY AFTER READER-CONTROL AND PUNCH COMMANDS)

0400 E014 000X XXXX XX00 XX00 8080

RFAO/COMPARE ERROR (RDR BUFFER CHANGED)
DATA (XX00) PRINTED AS ENTERED IN CORE - CHANNELS 8-1 RESPECTIVELY

0400 E015 000X XXXX XX00 XX00 8080

READO/COMPARE ERROR (RDR BUFFER UNCHANGED)
DATA (XX00) PRINTED AS ENTERED IN CORE - CHANNELS 8-1 RESPECTIVELY

DATE 28FEB66 01MAY66
EC NO. 415120 415120A

PROG ID 0804-
PAGE 2A

04DD F016 DCD4 XXXX XXXX D00D XXDD

READER-DSW READ ERROR WHEN REPRODUCING TAPES. IF TAPE STOPPED, THE FIRST CHARACTER BEYOND THE READ STATION WAS PERHAPS IMPROPERLY READ. THIS CHARACTER HAS NOT AS YET BEEN PUNCHED. BACK THE READER UP ONE CHARACTER AND PRESS START ON THE P-C. DATA (XX00) PRINTED AS ENTERED IN CORE - CHANNELS 8-0 RESPECTIVELY.

D4DD E017 000X XXXX XXXX 2X4D

WRITE STORAGE PROTECT SWITCH IS ON.
A READER STORAGE PROTECT ERROR SHOULD HAVE BEEN FORCED. CHECK IE

FIRST SECOND
READ READ

D4DD E018 000X XXXX XXDD XXDD

CONSECUTIVE READ ERROR DATA (XXDD) SHOULD AGREE.

D4DD E019 000X XXXX XX00 YY00

THE PROGRAM COULD NOT ALIGN THE TAPE IN THE READER IN THE LAST 500 CHARACTERS.

THE PROBLEM IS,

- A. OPEN DATA CHANNEL(S). XX00 SHOULD BE FE00, WHICH IS THE CHARACTER THAT WOULD BE PLACED IN CORE BY READING AN ALL-BITS CHARACTER. ANY MISSING BIT(S) INDICATE THE OPEN DATA CHANNEL(S).
- B. SHORTED DATA CHANNEL(S). YY00 SHOULD BE 0000, WHICH IS THE CHARACTER THAT WOULD BE PLACED IN CORE BY READING A NO-BITS CHARACTER. ANY BIT(S) PRESENT INDICATE THE SHORTED CHANNEL(S).
- C. IF BOTH XX00 AND YY00 ARE CORRECT,
 1. THE TAPE IS NOT IN THE READER CORRECTLY, OR
 2. THE READER CANNOT READ THE FIRST 8 CHARACTERS PROPERLY. IF SO, TRY ONE OF THESE,
 - A. TRY RUNNING THE REPRODUCE TAPE ROUTINE (ROUTINE 4).
 - B. TRY MANUALLY ALIGNING THE TAPE IN THE READER. THEN SPECIFY THE MANUAL TAPE ALIGNMENT OPTION (TABLE D) AND RESTART THE PROGRAM.

5. COMMENTS

THE FUNCTION TEST CONSISTS OF THREE NORMAL ROUTINES AND TWO OPTIONAL ROUTINES. NORMALLY, ROUTINES ONE THROUGH THREE ARE RUN IN ORDER. ALL ROUTINES ARE DESCRIBED IN PARAGRAPHS 5.1 THROUGH 5.5.

THE FUNCTION TEST,

- A. CHECKS DSW FOR PROPER BITS BEFORE ISSUING WRITE (PUNCH) OR CONTROL (READER) COMMANDS.

B. CHECKS DSW FOR CORRECTNESS AFTER XIO INSTRUCTION.

C. CHECKS FOR INTERRUPT FROM DEVICE WITHIN SPECIFIED TIME LIMIT.

D. CHECKS DSW AFTER INTERRUPT IS RECEIVED.

5.1 ROUTINE NO. 1 (PUNCH TEST)

TEST NO. 1 CHECKS THE OPERATION OF THE PAPER-TAPE PUNCH WHILE PUNCHING TWO TEST RECORDS. THE RECORD INCLUDES A RIPPLE PATTERN AND AN ALL-CHARACTER PATTERN. (REFER FIGURE 1).

5.2 ROUTINE NO. 2 (READER TEST)

THIS TEST CHECKS THE OPERATION OF THE PAPER TAPE READER WHILE READING ONE RECORD PRODUCED BY THE PUNCH TEST. THE TAPE IS NORMALLY AUTOMATICALLY ALIGNED IN THE READER BY READING EIGHT CONSECUTIVE CHARACTERS CORRECTLY. A MESSAGE IS PRINTED WHEN THE TAPE IS PROPERLY ALIGNED. IF DESIRED, THE OPERATOR CAN MANUALLY PLACE THE TAPE IN THE READER ON THE FIRST CHARACTER OF THE RIPPLE PATTERN AND SPECIFY THE MANUAL ALIGNMENT OPTION AS IN TABLE C. THE TAPE MAY ALSO BE REALIGNED IN THE READER AT ANY TIME.

EACH CHARACTER READ IS COMPARED WITH A WORD IN STORAGE. AN UNEQUAL COMPARE WILL CAUSE AN ERROR TYPEOUT. SEE 4.7. THERE WILL BE ONE ERROR TYPEOUT FOR EACH READ/COMPARE ERROR.

THESE ERROR PRINTOUTS MAY INDICATE THE TAPE IS NOT IN THE PROPER POSITION IN THE READER. THE TAPE MAY BE MANUALLY ADJUSTED IN THE READER OR THE OPERATOR MAY SELECT REALIGN TAPE. (TABLE C)

5.3 ROUTINE NO. 3 (PUNCH/READ/COMPARE TEST)

THIS TEST CHECKS THE FUNCTION AND RELIABILITY OF THE PAPER TAPE READER AND PUNCH WHEN OPERATED TOGETHER. BOTH DEVICES ARE OPERATED AT THE SAME SPEED. THE DATA READ IS COMPARED WITH THE DATA PUNCHED IN A NEW TAPE. THIS TEST ALSO HAS THE TAPE ALIGNMENT FEATURE OF TEST NO. 2. THE TEST IS COMPLETE AFTER ONE RECORD HAS BEEN PROCESSED.

5.4 ROUTINE NO. 4 (REPRODUCE-TAPES TEST)

THE OPERATOR HAS THE OPTION OF REPRODUCING ANY TAPE. THE OPERATOR MUST SPECIFY HALT ON ERROR OPTION IN MONITOR CONTROL TABLE C. AGAIN, ALL DEVICE STATUS CHECKING DONE IN TESTS NOS. 1 AND 2 IS INCLUDED IN THIS TEST. ALSO, A DSW ERROR WHEN READING THE TAPE WILL CAUSE A DELAY OF THE PROGRAM UNTIL THE OPERATOR CAN INTERVENE TO VERIFY THAT DELAY OF THE PROGRAM UNTIL THE OPERATOR CAN INTERVENE. WHEN AN ERROR OTHER THAN ED16 IS PRINTED PRESS START AND THEN VERIFY THAT THE PROPER PUNCHES ARE OBTAINED. SEE SPECIFIC ERROR MESSAGE FOR A10 IN INSTRUCTIONS.

5.5 ROUTINE NO. 5 (PUNCH ECM 3 SWITCH SETTINGS)

THIS ROUTINE PUNCHES THE DATA ENTERED VIA FUNCTION LEVEL 3, ALTERNATELY THE FIRST HALF THEN THE SECOND HALF OF THE WORD. (TABLE 3)

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES:

1. AN "E" IN COLUMN 1.
2. THE PID FOR THIS PROGRAM (COL. 2-3).
3. A TERMINATOR WORD OF "FFFF" (COL. 7-10).

COLUMN	PROGRAM ID		CARD SEQUENCE NUMBER				NUMBER OF EDIT ENTRIES				DDEF																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	26	31	36	41	46	51	56	61	66	71
CARD 0	E	0	4	0	0		E	D	0	C		0	0	0	1																
END	E	0	4	0	0		F	F	F	F																					

CARD 0 CONTAINS ONE ENTRY ONLY. THIS ENTRY IS THE DEVICE DEFINITION EDIT FIELD (DDEF) FOR THE PAPER TAPE READER/PUNCH TO BE TESTED.
CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.

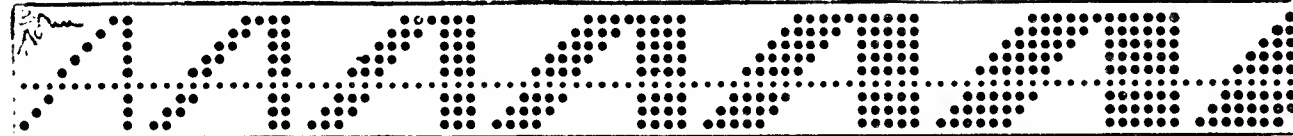
F
L

LEM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

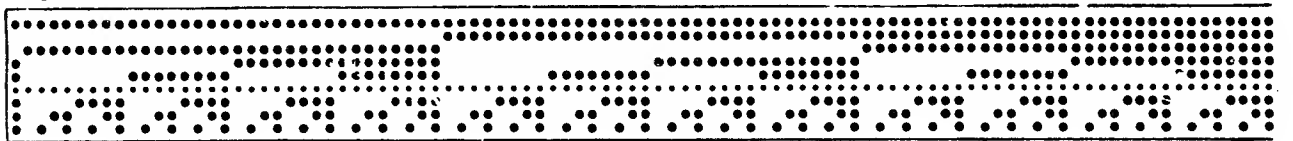
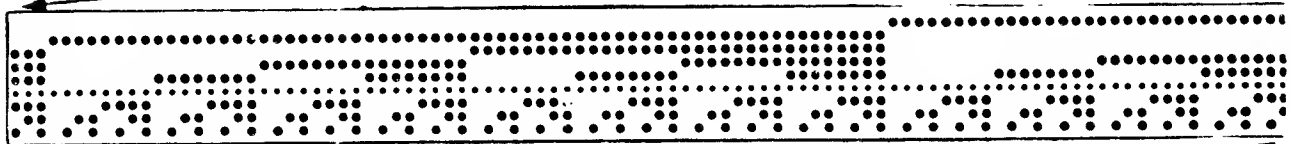
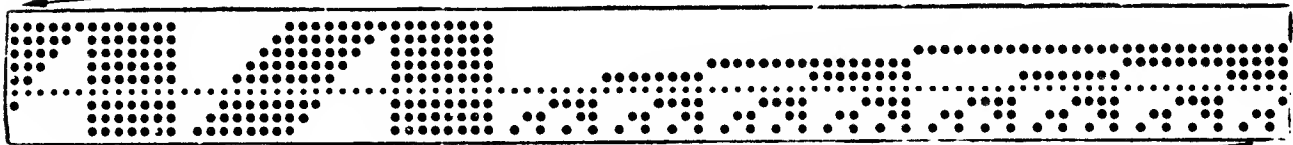
PART NO. 2106380

1054/55 FUNCTION TEST

PAGE 5



BEGINNING



END OF TAPE

SAMPLE 1055 OUTPUT

DATE 28FEEC6 01MAY66
EC NO. 415120 415123A

PROG ID 0804
PAGE 5

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196358
PAGE 1

1054/55 FUNCTION TEST

```
*
*          1800 DIAGNOSTIC MONITOR
*
*          TRANSFER VECTOR
*
012C      BEGIN EQU      300
012D      START EQU     BEGIN+1
012E      END EQU       START+1
C12F      LOG EQU       END+1
0130      ERROR EQU     LOG+1
0131      REQOV EQU     ERROR+1
0132      RELDV EQU     REQOV+1
0133      FALT EQU      RELDV+1
*
0000      ORG      **2047
*****
*          DIAGNOSTIC MONITOR
*          CONTROLLEC
*          1800 PAPER TAPE TEST
*****
*          PROGRAM STATUS TABLE
*
07FF 0 0400      PIO      DC      /0400      PROGRAM I.D. NO
0900 0 0000      PIC      DC      /0000      TEST NUMBER
08C1 C 0000      RAD      DC      /0000      TEST ADDRESS
0802 0 C000      SWC      CC      /0000      FCN 0 - CONTROL
0803 0 0000      SW1      CC      /0000      FCN 1 - INITIAL RTN
0804 0 0000      SW2      CC      /0000      FCN 2 - DEVICE ONLY
0805 C C000      SW3      CC      /0000      PUNCH SWS WCR0
0806 1 086C      CC      PTILZ      INITIALIZATION ADDR
0807 1 086C      CC      PTILZ      LOCP PROGRAM ADDR
0808 1 0A09      EPA      DC      TEN0      END PROGRAM ADDR
0809 C C000      MLSCF      CC      /0000      MAIN LINE SEQ CNTL
080A 0 C000      TERM      CC      /0000      COUNTER ENTRY
080B C FFFF      CC      /FFFF      TERMINATOR
080C 1 0AFC      CC      PEND      LAST PROGRAM ADDR
080D C 0000      DC
080E 0 C000      CC
080F 0 C000      CC
0810 C 0000      CC
0811 C 0000      CC
0812 0 C000      CDEF      LC      /0000      DEVICE CEF EXIT FLO
0813 C 0000      CC
0814 0 C000      DC
0815 0 C000      DC
0816 0 C000      DC
0817 C C000      CC
0818 0 C000      DC
0819 C C000      DC
081A 0 C000      DC
081B 0 C000      CC
081C 0 C000      CC
081D 0 C000      DC
*
*          INTERRUPT ROUTINE
*
081E C C000      DVA      CC      /0000      AREA CODE FOR DEVICE IE
*
081F C 0000      POINT      CC      /0000
0820 0 6A37      STX      2 X11+1
0821 01 CC00C972      X10      L      X10SD      SENSE DSW
0823 C C037      STO      DSWIT
0824 01 6780C866      LDX      I3 INTER
```

80400000
80400010
80400020
80400030
80400040
80400050
80400060
80400070
80400080
80400090
80400100
80400110
80400120
80400130
80400140
80400150
80400160
80400170
80400180
80400190
80400200
80400210
80400220
80400230
80400240
80400250
80400260
80400270
80400280
80400290
80400300
80400310
80400320
80400330
80400340
80400350
80400360
80400370
80400380
80400390
80400400
80400410
80400420
80400430
80400440
80400450
80400460
80400470
80400480
80400490
80400500
80400510
80400520
80400530
80400540
80400550
80400560
80400570
80400580
80400590
80400600
80400610
80400620
80400630
80400640
80400650
80400660
80400670

DATE 28FEB66 C1MAY66
EC NO. 415120 415120APRG ID 0804-0
PAGE 1

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196358
PAGE 1A

1054/55 FUNCTION TEST

```
0826 01 4F80085D      BSC      I3 HANDL-1
0828 01 F700C863      SINT      FOR      L3 INTER-3
082A 01 E780C866      AND      I3 INTER
082C 01 4C18C84E      BSC      L      PINT3,+ BR IF DSW OK
082E 01 66000984      LDX      L2 NIPES      SVC REQ ERROR
0830 0 701F      MDX      PINT1
*
0831 0 F031      CINT      ECR      INTED      CK DSW FOR 2 SVC REC
0832 00 4C00C000      BSC      L      /0C00      BR IF 2ND DCUBLE INT
0834 C 702C      CINT1      STO      DSWDI
0835 0 E02D      AND      INTED
0836 0 C02B      STO      CSWID
0837 01 4C200847      RSC      L      DINT4,Z      EXIT IF ONLY ONE REC
0839 0 C027      LD      DSWDI
083A 01 4C18C84E      BSC      L      PINT3,+ BR IF DSW OK
083C 01 6600098E      LDX      L2 DINE1
083E 0 7011      MDX      PINT1
*
083F 0 E822      CINT2      OR      CSWID
0840 0 D01A      STO      DSWIT
0841 0 F021      ECR      INTED
*
0842 01 4C18C84E      BSC      L      PINT3,+ BR IF DSW OK
0844 01 66000993      LDX      L2 DINE2
0846 0 7009      MDX      PINT1
*
0847 C 1340      CINT4      SLCA      3 C
0848 0 1001      SLA      1
0849 0 D012      STC      BUMRC      ZERO IF NO IEC BIT
084A 01 6700C83F      LDX      L3 DINT2      SET SECOND INT SW
084C C 68E6      STX      3 DINT1-1
084D 0 7009      MDX      XIT
*
084E 01 660009A2      PINT3      LDX      L2 DINE6
0850 01 6700C9AA      PINT1      LDX      L3 BSYES      CHECK BLSY DSW NEXT
0852 C 68B6      STX      3 MLSCF
0853 01 6E0009BF      STX      L2 ABSYX+1      PRO1
*
0855 0 6200      LDX      2 0
0856 0 6A0F      STX      2 INTER
*
0857 0C 6600C000      XIT      LDX      L2 /0C0C
0859 01 4C80C81F      BSC      1 POINT
*****
0858 C C000      DSWIT      CC      /0000      LAST INTERRUPT DSW
085C 0 0000      BUMRC      CC      /0000
085D 1 0857      DC      XIT
085E 1 0828      FANOL      CC      SINT      INTERRUPT BR ADFS
085F 1 0828      DC      SINT
0860 1 C831      DC      DINT
0861 0 0000      DSWDI      CC      /0000
0862 0 C00C      DSWIC      CC      /0000      IDENTIFY INT YET EXP
*
0863 0 5000      INTED      CC      /5000      RDR-PCH SVC REQ EXP
0864 0 4000      CC      /4000      RDR SVC REQ
0865 C 1000      DC      /1000      PCH SVC REQ
0866 0 0000      INTER      CC      /0000      INTERRUPT EXPECTED
*
*          1 = READER
*          2 = PUNCH
*          3 = BOTH
0867 1 0978      DC      RMASK      READER
0868 1 0979      DC      XMASK      PUNCH
*****
0869 00 4480012C      PTBGN      BSI      1 BEGIN      CALL MONITOR      * SC
```

80400680
80400690
80400700
80400710
80400720
80400730
80400740
80400750
80400760
80400770
80400780
80400790
80400800
80400810
80400820
80400830
80400840
80400850
80400860
80400870
80400880
80400890
80400900
80400910
80400920
80400930
80400940
80400950
80400960
80400970
80400980
80400990
80401000
80401010
80401020
80401030
80401040
80401050
80401060
80401070
80401080
80401090
80401100
80401110
80401120
80401130
80401140
80401150
80401160
80401170
80401180
80401190
80401200
80401210
80401220
80401230
80401240
80401250
80401260
80401270
80401280
80401290
80401300
80401310
80401320
80401330
80401340
80401350

DATE 28FEB66 C1MAY66
EC NO. 415120 415120APRG ID 0804-0
PAGE 1A

1054/55 FUNCTION TEST

```
086B 1 07FF          DC      PIO      ADOR OF PID NC  *
*****
*
*      INITIALIZATION ROUTINE
*
086C 0 0000          PTILZ DC      /OCOC      ENTRY POINT      SE
086D 01 C4000802      LD      L      SWO      CK IF AUTO ALIGNMENT
086F 0 1007          SLA      7
0870 0 4810          BSC      -      SKIP IF NO REALIGN
0871 0 1009          SLA      5
0872 01 C4000A26      STO      L      NIST      SET ALIGN PATTERN SW
*
0874 01 66000879      LOX      L2 80FS      SET MAIN LINE SEQ
0876 0 6A92          STX      2 MLSCF      * CONTRDL FIELD
0877 01 4C80C86C      BSC      1 PTILZ      SX
*****
*
0879 0 C098          BDSS LD      DDEF
087A 01 4C28C885      BSC      L      BUILD-1,+Z 8R IF DEVICE MINE
087C 0 62F8          LDX      2 -8
087D 01 6E00CA25      STX      L2 CORCT
*****
087F 00 4480C131      BOSS2 BSI      1 RECDV      REQUEST DEVICE      * SC
0881 1 CAD3          DC      NOPE      ODEVICE BUSY      *
0882 1 0812          DC      DDEF      *
0883 1 C81E          OC      U/A      AREA CODE      *
0884 1 0808          DC      TERM      *
*****
*
0885 0 6107          LOX      1 7      INIT XID AREA CODES
0886 01 C500C970      BUILD LD      L1 XICXX
0888 0 E895          OR      OVA
0889 01 C500C970      STO      L1 XICXX
0888 0 71FE          MDX      1 -2
088C 0 70F9          MDX      BUILD0
*
088D 0 1810          SRA      16      ZERO ROUTINE NUMBER
088E 01 C4000830      STO      L      RID
*
0890 01 660007FF      MGR1 LDX      L2 F10
0892 0 C204          LD      2 SW1-PID      ASSURE PROPER ENTRY
0893 0 0022          STO      SWCMP
0894 0 1000          SLA      13
0895 0 1800          SRA      13
*
0896 0 4820          BSC      Z      SET ROUTINE ID
0897 0 C201          STO      2 RIO-PID
*
0896 01 6580C800      LDX      11 RIO      UPDATE THE RID
089A 0 4818          BSC      +-
0898 0 7101          MDX      1 1      INDEX THE ROUTINE NC
*
089C 01 6000C600      STX      L1 RID      SET RTN NC AND ADDR
089E 01 C500C9AE      LD      L1 RTCON-1
08AU 0 D202          STO      2 RAD-PIO
*
08A1 0 6300          LDX      3 0      RESTORE CHAR RTN
08A2 01 6F00CA26      STX      L3 NIST
08A4 01 6F00CA96      STX      L3 DULP+1
08A6 0 6301          LDX      3 1
08A7 01 6F00CA94      STX      L3 DULP-1
*
08A9 0C 6700C187      LDX      L3 391      SET RECCRD LENGTH
08AB 01 6F00C8D6      STX      L3 WRECK
*
08AD 01 4D80C8AE      BSC      11 RTCON-1      8R TD USER ROUTINE
*
```

DATE 28FEB66 C1MAY66
EC NO. 415120 415120APROG ID 0804-0
PAGE 2

1054/55 FUNCTION TEST

```
08AF 1 0887          RTCON OC      RTN11      PUNCH ROUTINE
0880 1 08C4          DC      RTN2      READER RTN
0881 1 08CC          OC      RTN3      PCH + ROR CHECK
0882 1 08D7          DC      RTN41     REPRDDUCE TAPE
0883 1 08F8          DC      RTN51     PCH BIT SW DATA RTN
0884 1 0AEE          DC      PTEND     ENO ROUTINE
0885 1 0AEE          OC      PTEND     ENO ROUTINE
*
0886 C 0000          SWCMP OC      /OC00      SW1 COMPARE WORD
*****
*
*      MAINLINE TESTS
*
*      TEST 1 - PUNCH TEST
*
0887 00 6500030E      RTN11 LDX      L1 782      SET FOR 2 RECORDS
0889 0 691C          STX      1 WRECK
088A 00 65000187      LOX      L1 391
088C 0 69F8          STX      1 RTN11+1
088D 01 44000A8E      RTN1 BSI      L MARK      BUILD NEXT CHARACTER SC
088F 0 405E          BSI      L XKRDY      PUNCH READY SC
08C0 01 4C000961      BSC      L PUNH      PUNCH ONE CHARACTER SC
08C2 0 4053          RTN1A BSI      CRASH      CK IF END ROUTINE SC
08C3 0 70F9          MDX      RTN1
*
*      TEST 2 - READER TEST
*
08C4 01 44000A8E      RTN2 BSI      L MARK      BUILD NEXT CHARACTER SC
08C6 0 4067          BSI      L RRDY      READER READY SC
08C7 0 7076          MDX      FEEO      CONTROL READER
08C8 01 440009C0      RTN2A BSI      L RRDY      REAO AND COMPARE SC
08CA 0 4048          BSI      CRASH      CK IF END ROUTINE SC
08CB 0 70F8          MDX      RTN2
*
*      TEST 3 - PCH-RD + LCMPCARE
*
08CC 01 44000A8E      RTN3 BSI      L MARK      BUILD NEXT CHARACTER SC
08CE 0 404F          BSI      L XKRDY      PUNCH READY SC
08CF 0 405E          BSI      L RRDY      READER READY SC
08D0 01 4C00C94D      BSC      L XFEED     PUNCH + CONTROL RDR
08D2 01 440009C0      RTN3A BSI      L RRDY      READ AND COMPARE SC
08D4 0 4041          BSI      CRASH      CK IF END OF ROUTINE SC
08D5 0 70F6          MDX      RTN3
*
08D6 0 0000          WRECK DC      /OC00
*
*      TEST 4 - REPRO PAPER TAPE
*
08D7 01 C400C803      RTN41 LD      L SW1
08D9 01 4C180890      BSC      L MGR1,+-      8R IF NC EXECUTE RTN
08D8 0 1010          SLA      16
08DC 01 04000A67      STO      L XCHAR      PUNCH FEEO HOLE 1-T
*
08DE 01 C400C803      RTN4 LO      L SW1
08E0 0 F0D5          EOR      SWCMP
08E1 01 4C200890      BSC      L MGR1,2      8R IF END THIS RTN
08E3 0 403A          BSI      L XKRDY      PUNCH READY SC
08E4 0 4049          BSI      L RRDY      READER READY SC
08E5 01 4C00C94D      BSC      L XFEED     PUNCH + CONTROL ROR
*
08E7 01 CC000976      RTN4A X10     L XICRR      READ ROR BUFFER
08E9 01 C4000A66      LD      L CARED      PLACE CHAR READ IN
08EB 01 0400CA67      STO      L XCHAR      * CUTPUT AREA
```

DATE 28FEB66 01MAY66
EC NO. 415120 415120APROG ID 0804-0
PAGE 2A

18M MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 18CC SYSTEM

PART NO. 2196358
PAGE 3

1054/55 FUNCTION TEST

```
08ED 0 10A0      SLT 32
08EE 01 CC00C972 XIO L XIOSO SENSE DSW
08FO 01 4C10C8DE BSC L RTN4,- BR IF NC DSW ERRORS
*
08F2 0 6116      LDX 1 /0016 PRINT RDR ERROR
08F3 01 740ICA61 MDX L EMESG,1
08F5 01 44000A4C BSI L PROSW MC
08F7 01 74FF0A61 MDX L EMESG,-1
*
08F9 0 4034      BSI RRDY READER READY SC
08FA 0 7043      MDX FEED CCNTROL READER
*
* MDX RTN4
*****
*
* ROUTINE FIVE
*
* PUNCH BIT SWITCH DATA
*
08FB 01 C40C0803 RTN51 LD L SW1
08FD 01 4C18C890 BSC L MGR1,+-- BR IF NC EXECUTE RTN
08FF 0 6300      LDX 3 0
0900 0 7002      MDX RTN5B
0901 00 67000300 RTN5A LDX L3 /0000
0903 01 C400C805 RTN5E LD L SW3
0905 0 1300      SLA 3 0
0906 01 C400CA67 STC L CHAR
0908 0 C0F9      LD RTN5A+1
0909 0 E00B      CMP 0
090A 0 6300      LDX 3 0
090B 0 7001      MDX RTN5D
090C 0 6308      LDX 3 8
090D 0 68F4      RTN5C STX 3 RTN5A+1
090E 01 C400C803 LD L SW1
0910 0 FDA5      EOR SWCMP
0911 01 4C20C890 BSC L MGR1,Z BR IF END THIS RTN
0913 0 400A      BSI XKROY
0914 0 704C      MDX PUNH
*
0915 0 0000      C DC 0
*****
*
* TEST 5 - PUNCH BIT SWS
*
*
* COUNT CHARACTERS ROUTINE
*
0916 0 C000      CRASH DC /0000 IS RTN COMPLETE SE
0917 01 74FFC8D6 MDX L WRECK,-1
0919 0 7C02      MDX RASH
*
091A 01 4C00C890 BSC L MGR1 BR - END CF RECCRD
*
091C 01 4C80C916 RASH BSC I CRASH RET IF RCD NOT CMPLT SX
*
*****
*
* PUNCH READY ROUTINE
*
091E 0 C000      XKRDY DC /0000
091F 0 0852      XIO XIOSO SENSE AND SAVE DSW SE
0920 0 D062      STO OSWAS
*
0921 0 E057      AND XMASK REMOVE RDR ARDY BIT
*
0922 01 4C98C91E BSC I XKRDY,+-- BR IF OSW OKAY SX
```

DATE 28FEB66 C1MAY66
EC NO. 415120 415120APROG ID 0804-0
PAGE 3

18M MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 18CC SYSTEM

PART NO. 2196358
PAGE 3A

1054/55 FUNCTION TEST

```
0924 0 1007      SLA 7 PRINT DSW ERROR
0925 0 6105      LOX 1 5
0926 0 C85C      LCO OSWAS
0927 0 E057      AND POFF
0928 0 18D0      RTE 16
0929 01 4400CA4C BSI L PROSW MC
*
092B 01 4400CA7F BSI L TIME PAUSE BEFORE RECHECK SC
092D 0 70F1      MDX XKRDY+1
*****
*
* READER READY ROUTINE
*
092E 0 C000      RRDY DC /0000
092F 0 0842      XIO XIOSO SENSE AND SAVE OSW SE
0930 0 D052      STO OSWAS
*
0931 0 E046      AND RMASK REMOVE RDR ARDY BIT
*
0932 01 4C98092E BSC I RRDY,+-- BR IF DSW OKAY SX
*
0934 0 1005      SLA 5 PRINT DSW ERROR
0935 0 6104      LOX 1 4
0936 0 C84C      LDD OSWAS
0937 0 E046      AND ROFF
0938 0 18D0      RTE 16
0939 01 4400CA4C BSI L PROSW MC
*
093B 01 4400CA7F BSI L TIME PAUSE BEFORE RECHECK SC
093D 0 70F1      MDX RRDY+1
*****
*
* CONTROL READER ROUTINE
*
093E 0 6101      FEED LDX 1 1 SET READER INTRPT
093F 01 6D00C866 STX L1 INTX * EXPECTED
0941 01 6D00C9AB STX L1 BSYES+1
*
0943 0 C830      XIO XICFO FEED READER
*
0944 0 C82D      XIO XIOSO SAVE BUSY DSW
0945 0 D03B      STO OSWBY
*
0946 01 44000A7F BSI L TIME PAUSE FOR INTRPT SC
*
0948 0 6111      LDX 1 /0C11 PRINT NC INTRPT ERR
0949 0 C837      LDD OSWBY
094A 0 E033      AND ROFF
094B 0 E82F      OR DSWR2
094C 0 7052      MDX DINE5
*****
*
* PUNCH AND CONTROL READER ROUTINE
*
094D 01 6500C834 XFEEC LDX L1 DINT1 RESTORE DOUBLE INT
094F 01 60J0C833 STX L1 DINT1-1 * SWITCH
*
0951 0 6103      LDX 1 3 SET DOUBLE INTRPT
0952 01 6D00C866 STX L1 INTX * EXPECTED
0954 01 6D0009A8 STX L1 BSYES+1
*
0956 0 0819      XIO XICXX FEED AND PUNCH
0957 0 081C      XIO XIOFD
*
0958 0 0819      XIO XIOSO SAVE BUSY DSW
```

DATE 28FEB66 C1MAY66
EC NO. 415120 415120APROG ID 0804-0
PAGE 3A

1054/55 FUNCTION TEST

```
0959 0 D027      STO      DSWBY
095A C1 44000A7F  *      BSI  L  TIME      PAUSE FOR INTERRUPT SC
095C 0 6113      *      LOX   1 /OC13    PRINT NC INTRPT ERR
095D 0 C023      *      LO    DSWBY
095E 0 1800      *      RTE    16
095F 0 C01D      *      LO    DSWRX
0960 0 703E      *      MDX    DINE5
*****
*
*      PUNCH ROUTINE
*
0961 0 6302      *      PUNH  LOX   3 2      SET PUNCH INTRPT
0962 01 6F00C866 *      STX  L3 INTEX  * EXPECTED
0964 01 6F00C9A8 *      STX  L3 BSYES+1
*
0966 0 0809      *      XIO    XICXX    PUNCH CHARACTER
*
0967 0 C80A      *      XIO    XICSO    SAVE BUSY DSW
0968 0 C018      *      STO    DSWBY
*
0969 01 44000A7F *      BSI  L  TIME      PAUSE FOR INTERRUPT SC
*
0968 0 6112      *      LOX   1 /OC12    PRINT NC INTRPT ERR
096C 0 C814      *      LDD    DSWBY
096D 0 EC11      *      AND    POFF
096E 0 E800      *      OR     DSWX2
096F 0 702F      *      MDX    DINE5
*****
*
*
0970 0 C000      *      BSS  E
0970 1 0A67      *      XICXX  DC    XCHAR    PUNCH ICCC
0971 0 C100      *      DC      /0100
0972 0 000C      *      XICSC  DC    /OCOC    SENSE DSW ICCC
0973 0 0701      *      DC      /0701
0974 0 0000      *      XIOFC  DC    /OC00    FEED IOCC
0975 0 0410      *      DC      /C41C
0976 1 CA66      *      XIORR  DC    CAREO    READ IOCC
0977 0 C20C      *      DC      /0200
0978 0 FEFF      *      RMASK  DC    /FEFF    READER MASK
0979 0 FBFF      *      XMASK  DC    /FBFF    PUNCH MASK
097A 0 FFFF      *      DC      /FFFF    MINUS ONE
097B 0 C000      *      DSWR2  DC    /OCOC    ROR BUSY EXP DSW
097C 0 C300      *      DSWX2  DC    /C30C    PCH BUSY EXP DSW
097D 0 0F00      *      DSWRX  DC    /OF00    DOUBLE BUSY DSW EXP
097E 0 010C      *      ROFF  DC    /010C
097F 0 0400      *      POFF  DC    /0400
0980 0 0000      *      DC      /OC00
0981 0 0000      *      DSWBY  DC    /CCOC    LAST BUSY DSW
0982 0 C000      *      DC      /CCOC    NOT USEC
0983 0 C00C      *      CSWAS  DC    /CCOC    LAST DSWER PRINTED
*****
*
*      PRINT DSW ERRORS DETECTED
*      DURING INTERRUPT
*
0984 01 658009A8 *      NIPES  LDX   11 BSYES+1    PRINT DSW ERROR
0986 01 CC000858 *      LOD    L  DSWIT          * DETECTED WHILE
0988 01 E500C970 *      AND    L1 ROFF-1        * RUNNING RTN 1 CR
098A 01 E000C863 *      OR     L1 INTEX-3      * RTN 2
098C 0 7105      *      MOX    1 5
098D 0 7C11      *      MDX    DINE5
*
*
098E 01 C400C858 *      CINE1  LO  L  DSWIT      PRINT DSW ERROR
0990 0 1800      *      RTE    16          * DETECTED WHILE
```

80404080
80404090
80404100
80404110
80404120
80404130
80404140
80404150
80404160
80404170
80404180
80404190
80404200
80404210
80404220
80404230
80404240
80404250
80404260
80404270
80404280
80404290
80404300
80404310
80404320
80404330
80404340
80404350
80404360
80404370
80404380
80404390
80404400
80404410
80404420
80404430
80404440
80404450
80404460
80404470
80404480
80404490
80404500
80404510
80404520
80404530
80404540
80404550
80404560
80404570
80404580
80404590
80404600
80404610
80404620
80404630
80404640
80404650
80404660
80404670
80404680
80404690
80404700
80404710
80404720
80404730
80404740
80404750

1054/55 FUNCTION TEST

```
0991 0 6108      *      LDX   1 8      * RUNNING RTN 3 OR
0992 0 760A      *      MOX    DINE4    * RTN 4
*
0993 01 C400C858 *      CINE2  LO  L  DSWIT      SEG SVC REQ ERROR
0995 0 1800      *      RTE    16
0996 01 C400085C *      LO    L  BUMRQ          BR IF 1ST SVC REQ OK
0998 01 4C20099C *      BSC    L  DINE3,2
099A 0 6109      *      LDX   1 5
0998 0 7001      *      MOX    DINE4
*
099C 0 6110      *      CINE2  LDX   1 /OC1C
0990 01 C400C863 *      CINE4  LD  L  INTED
099F 0 1800      *      CINE5  RTE    16
09A0 01 44000A4C *      BSI  L  PRDSW          MC
*
09A2 01 65800800 *      CINE6  LOX   11 RIO      RET TO MAINLINE RTN
09A4 0 C07F      *      LO    ERRET
09A5 01 4C98CACC *      BSC    11 SORTS-1,+ BR IF NC ERROR LAST
*
09A7 0 1810      *      SRA    16      RETURN TO FINISH
09A8 0 0078      *      STO    ERRET      * ALIGNING TAPE
09A9 0 7017      *      MDX    REAO      * IN READER
*****
*
*      CHECK BUSY DSW
*
09AA 0C 6500C000 *      BSYES  LDX   L1 /CCOC
09AC 0 C0D4      *      LD     DSWBY
09AD 01 E500C977 *      AND    L1 RMASK-1
09AF 01 F500C97A *      ECR    L1 DSWR2-1
09B1 01 4C18C9B8 *      BSC    L  XBSE,+ BR IF DSW OK
*
09B3 0 C8C0      *      LDD    DSWBY      PRINT DSW ERROR
09B4 01 E500C970 *      AND    L1 ROFF-1
09B6 01 E000C97A *      OR     L1 DSWR2-1
09B8 0 18D0      *      RTE    16
09B9 01 44000A4C *      BSI  L  PRDSW          MC
*
09B8 0 6100      *      XBSE  LDX   1 0      BLOCK PAUSE FOR INT
09BC 01 6000C80A *      STX   L1 MLSCF+1    * ROUTINE REENTRY
*
09BE 0C 4C00C000 *      XB5YX  BSC    L  /CCCC    BRANCH TO SCHEMERE PMO1
*****
*
*      COMPARE ROUTINE
*
09C0 0 0000      *      ROIT  DC      /OC00
09C1 01 C400CA66 *      REAO  LO  L  CAREO      SAVE LAST CHAR REAO
09C3 01 C400CA69 *      STO   L  LREAD          READ CHARACTER
09C5 0 C880      *      XIO    XICRR
*
09C6 01 C4000A66 *      LD     L  CAREO      SAVE CHARACTER REAO
09C8 0 D05E      *      STO   SAVIT
*
09C9 01 2C41CA66 *      STS    L  CAREO, /41    STC PROT READ AREA
09CB 0 C85C      *      LOD    K8040
09CC 0 C8A9      *      XIC    XICRR          FORCE READ ERROR
09CD 0 08A4      *      XIO    XIOSD          SENSE DSW
09CE 01 2C40CA66 *      STS    L  CAREO, /40    CLEAR STO PROT BIT
09D0 0 0082      *      STO    OSWAS
09D1 0 E0A6      *      AND    RMASK
09D2 0 F055      *      EOR    K8C40
09D3 01 4C18C9E0 *      BSC    L  ROITA,+ BR IF DSW OK
*
09D5 0 C8AD      *      LOD    OSWAS      PRINT DSW ERROR
09D6 0 E0A7      *      AND    ROFF
09D7 0 E850      *      OR     K8C40
09D8 0 18D0      *      RTE    16
```

80404760
80404770
80404780
80404790
80404800
80404810
80404820
80404830
80404840
80404850
80404860
80404870
80404880
80404890
80404900
80404910
80404920
80404930
80404940
80404950
80404960
80404970
80404980
80404990
80405000
80405010
80405020
80405030
80405040
80405050
80405060
80405070
80405080
80405090
80405100
80405110
80405120
80405130
80405140
80405150
80405160
80405170
80405180
80405190
80405200
80405210
80405220
80405230
80405240
80405250
80405260
80405270
80405280
80405290
80405300
80405310
80405320
80405330
80405340
80405350
80405360
80405370
80405380
80405390
80405400
80405410
80405420
80405430

1054/55 FUNCTION TEST

Address	Operation	Source	Destination	Comments
09D9 0	6117	LOX	1 /OC17	
09DA 0	4071	BSI	PROSW	
09DB 0	C04B	LO	SAVIT	CHECK IF SAME CHAR
09DC 01	8400CA66	CMP	L CAREO	WAS READ
09DE 0	1000	NDP		
09DF 0	701E	MOX	ROIT1	NO - ERRDR IN READ
09E0 0	C895	ROITA	XIO	
09E1 01	C400CA67	ROITC	LD	
09E3 01	F400CA66	ECP	L XCHAR	OC CHARACTERS
09E5 0	1800	SRA	L CARED	COMPARE
09E6 01	4C20CACA	BSC	L ROIT2,Z	BR IF NON COMPARE
09E8 01	7401CA25	MOX	L CORCT,1	
09EA 0	705F	MOX	ROITE	EXIT
09EB 0	683A	STX	C NIST	
09EC 0C	6500A0C1	LDX	L1 /AC01	PRINT TAPE ALIGNED
09EE 0C	660CAFED	LDX	L2 /AFED	
09F0 C	407A	BSI	PTLOG	
09F1 01	C400C802	LD	L SWC	TURN OFF REALIGN SW
09F3 0	1009	SLA	S	
09F4 0	1809	SRA	9	
09F5 01	C400C802	STO	L SWC	
09F7 0	1810	RDITC	SFA	RESET BIT LINE CHECK
09F8 0	C031	STO	BTLINE	
09F9 C	C031	LO	KFF00	
09FA 0	C02E	STO	NOLNE	
09FB 0	6164	LCX	1 IOC	
09FC 0	692F	STX	1 TRIAL	
09FD 0	704C	MCX	ROITE	EXIT
09FE 0	1800	ROIT1	RTE	
09FF C	C066	LC	16 CAREO	
0A00 0	6118	LOX	1 /18	SET MESSAGE 10
0A01 01	7401CA61	MCX	L EMESG,1	
0A03 01	4400CA4C	BSI	L PROSW	
0A05 01	74FFCA61	MDX	L EMESG,-1	
0A07 0	C01F	LO	SAVIT	
0A08 0	C05E	STO	XCHAR	
0A09 0	70D7	MDX	ROITO	
0A0A 0	C018	ROIT2	LD	
0A0B 01	4C20CA2D	BSC	L RDIT4,Z	BR IF NOT FIRST ERR
0A0C 0	C01C	LD	BTLINE	BIT LINE OPEN CK
0A0E 0	E057	CR	CAREO	
0A0F 0	C01A	STO	BTLINE	
0A10 0	C018	LO	NOLNE	BIT LINE SHORT CK
0A11 0	E054	ANO	CARED	
0A12 0	C016	STC	NOLNE	
0A13 01	74FFCA2C	MOX	L TRIAL,-1	CCLNT DOWN 100 MAX
0A15 0	7007	MOX	ROIT3	
0A16 0	6119	LCX	1 /19	
0A17 0	C011	LO	NOLNE	
0A18 0	1800	RTE	16	
0A19 0	C010	LD	BTLINE	
0A1A 0	F010	ECP	KFF00	
0A1B 0	4030	BSI	PROSW	PRINT NC ALIGN ERROR
0A1C 0	700A	MOX	ROITD	
0A1D 0	61F8	RDIT3	LDX	1 -8

80405440
80405450
80405460
80405470
80405480
80405490
80405500
80405510
80405520
80405530
80405540
80405550
80405560
80405570
80405580
80405590
80405600
80405610
80405620
80405630
80405640
80405650
80405660
80405670
80405680
80405690
80405700
80405710
80405720
80405730
80405740
80405750
80405760
80405770
80405780
80405790
80405800
80405810
80405820
80405830
80405840
80405850
80405860
80405870
80405880
80405890
80405900
80405910
80405920
80405930
80405940
80405950
80405960
80405970
80405980
80405990
80406000
80406010
80406020
80406030
80406040
80406050
80406060
80406070
80406080
80406090
80406100
80406110

1054/55 FUNCTION TEST

Address	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464	Op465	
---------	----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--

1054/55 FUNCTION TEST

[illegible]

DATE 28 FEB 66 C1 MAY 66
EC NO. 415120 415120A

1054/55 FUNCTION TEST

0A95	0C	6600C00C	DULP	LDX	L2 0	XR2	80407480
0A97	01	4E800A8F	BSC	12	WHAT	GO BUILD CHARACTER	80407490
0A99	01	C50CCAC3	* NRIPX	LD	L1	BITSX	80407500
0A98	0	D0CB		STO		XCHAR	80407510
0A9C	0	6201		LOX	2	1	80407520
0A9D	0	701C		MCX		EXITX	80407530
0A9E	0	C0C8	* SRIPX	LO		XCHAR	80407540
0A9F	0	1001		SLA		1	80407550
0AA0	0	00C6		STO		XCHAR	80407560
0AA1	0	4820		BSC		Z	80407570
0AA2	D	7D18		MDX		EXITX	80407580
0AA3	0	6202		LOX	2	2	80407590
0AA4	0	C01E		LO		BITSX	80407600
0AA5	0	C0C1		STO		XCHAR	80407610
0AA6	0	6925		STX	1	COUNX	80407620
0AA7	C1	74FFCACC	* PARX	MOX	L	COUNX,-1	80407630
0AA9	C	7011		MDX		EXITX	80407640
0AAA	0	6200		LOX	2	0	80407650
0AA8	0	7101		MDX	1	1	80407660
0AAC	0	6920		STX	1	KOUNX	80407670
0AA0	D1	74F80ACO		MOX	L	KOUNX,-8	80407680
0AAF	0	70D1		MOX		ENRIX	80407690
0AB0	0	700A		MDX		EXITX	80407700
0AB1	0	6203	* ENRIX	LOX	2	3	80407710
0AB2	C	7008		MOX		EXITX	80407720
0AB3	D	C018	* ALLRX	LO		COUNX	80407730
0AB4	0	00B2		STO		XCHAR	80407740
0AB5	0	800E		A		ONEEX	80407750
0AB6	0	0015		STO		COUNX	80407760
0AB7	D1	4C20CA88		BSC	L	EXITX,Z	80407770
0AB9	0	6101	* * *	LDX	1	1	80407780
0ABA	D	620C		LOX	2	0	80407790
0AB8	0	6908	EXITX	STX	1	DULP-1	80407800
0ABC	D	6A09		STX	2	DULP+1	80407810
0ABD	D1	4C80CABE		BSC	1	MARK	80407820
0ABF	1	0A99	* * *	WHAT	DC	NRIPX	80407830
0AC0	1	0A9E		OC		SRIPX	80407840
0AC1	1	0AA7		DC		PARX	80407850
0AC2	1	0AB3		OC		ALLRX	80407860
0AC3	0	FFD0	* * *	BITSX	OC	/FFOC	80407870
0AC4	0	0100		CNEEX	CC	/0100	80407880
0AC5	0	00C0		OC		/CC00	80407890
0AC6	C	00E0		CC		/00E0	80407900
0AC7	0	00F0		DC		/CCF0	80407910
0AC8	0	00F8		OC		/OCF8	80407920
0AC9	0	00FC		DC		/OCFC	80407930
0ACA	0	00FE		OC		/OCFE	80407940
0ACB	0	00FF		DC		/OCFF	80407950
0ACC	C	0000	* * *	COUNX	CC	/CC00	80407960
0ACD	D	0000		KOUNX	OC	/OC00	80407970
0ACE	1	08C2	*****				80407980
0ACF	1	08C2	* * *				80407990
0AD0	1	08C2	* * *				80408000
0AD1	1	08C2	* * *				80408010
0AD2	1	08C2	* * *				80408020
0AD3	1	08C2	* * *				80408030
0AD4	1	08C2	* * *				80408040
0AD5	1	08C2	* * *				80408050
0AD6	1	08C2	* * *				80408060
0AD7	1	08C2	* * *				80408070
0AD8	1	08C2	* * *				80408080
0AD9	1	08C2	* * *				80408090
0ADA	1	08C2	* * *				80408100
0ADB	1	08C2	* * *				

DATE 28 FEB 66 C1 MAY 66
FC NO. 415120 415120A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 18CC SYSTEM

PART NO. 2196358
PAGE 7

1054/55 FUNCTION TEST

```
OACF 1 08C8          OC      RTN2A    ROUTINE 2
OAO0 1 08D2          DC      RTN3A    ROUTINE 3
OAO1 1 08E7          DC      RTN4A    ROUTINE 4
OAO2 1 0901          DC      RTN5A    ROUTINE 5

*
*
OAO3 01 65000879     *ADPF  LCX  L1 80SS    TRY AGAIN - LATER
OAO5 01 6000C809     *      STX  L1 MLSCF
CAD7 00 4C800120     *      BSC  I  START

*
*
OAO9 0 0000          TEN0  OC      /0C00
OADA 0C 6500030E     *      LDX  L1 782      SET RTN1 FOR TWO REC
OADC 01 6000C888     *      STX  L1 RTN1+1
OADE 00 67007FFF     *      LOX  L3 /7FFF
OAE0 01 C400C866     *TEND1 LD  L  INTEX
OAE2 01 4C18CAE6     *      BSC  L  TEN02,+-  BR IF INTRPT NOT EXP
OAE4 0 73FF          *      MDX  3 -1
OAE5 0 70FA          *      MOX  TEN01
OAE6 01 2C40CA66     *TEND2 STS  L  CARED,/40
*****
OAE8 00 44800132     *      BSI  1  RELOV    RELEASE DEVICE  *
OAEA 1 0812          *      DC      ODEF      *
OAE8 1 0808          *      DC      TERM      *
*****
OAE0 01 4C80CA09     *      BSC  I  TEN0
*
*
OAE0 01 6000CA25     *PTEND STX  L1 CORCT
*****
OAF0 0C 4C80C12E     *      BSC  1  ENO      ENO PROGRAM  * SC
*****
OAF2 0000            *      BSS  E
OAF2 0000            *      ORG  PIC+/2FE
OAF0 0 0000          *PENO  DC
OAFE 0869            *      END  PTRGN
```

80408160
80408170
80408180
80408190
80408200
80408210
80408220
80408230
80408240
80408250
80408260
80408270
80408280
80408290
80408300
80408310
80408320
80408330
80408340
80408350
80408360
80408370
80408380
80408390
80408400
80408410
80408420
80408430
80408440
80408450
80408460
80408470
80408480
80408490
80408500
80408510

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 18CC SYSTEM

PART NO. 2196358
PAGE 7A

1054/55 FUNCTION TEST

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
ALL8X	0A83	OAC2
BARX	0AA7	OAC1
BEGIN	012C	CCC0,0E69
RITSX	OAC3	CA59,0AA4
BOSS	0879	C874,0A03
BOSS2	087F	
8YES	C9AA	085C,C541,C954,0564,C984
BTLINE	0A2A	C9F8,0A00,0A0F,0A15
BUILD	0886	C87A,0E8C
BUMRC	085C	C845,0596
CARE0	CA66	C8E5,0576,C9C1,05C6,09C9,C5CE,090C,05E3,09FF,0A0E,CA11,0A3A,CA41,0A44,0AE6
CKOSX	0A5A	CA55
CORCT	0A25	C870,05E8,0A1E,0AEE
COUNX	0ACC	0AA6,0AA7,0A83,0A86
CRASH	0C16	08C2,0ECA,C8D4,051C
ODEF	0812	C879,C882,0AEA
DINE1	098E	C82C
DINE2	0993	C844
DINE3	099C	C958
DINE4	099D	C952,0598
DINE5	C99F	C54C,0560,096F,058D
DINE6	09A2	C84E
DINT	0831	C860
DINT1	0834	C84C,C54D,094F
DINT2	083F	C84A
DINT4	0847	0827
DSWAS	0982	C920,052E,C93C,0536,C9D0,C9D5
OSW8Y	0981	C945,0549,C955,055D,C968,056C,09AC,0983
OSW0I	0861	0824,0E35
OSWIO	0862	C826,0E3F
DSWIT	C85B	0823,C84C,C986,C58E,C953
OSWRX	097C	095F
DSWR2	0978	C948,05AF,C9B6
OSWX2	C97C	096C
OULP	0A95	C8A4,0EA7,CAB8,0A8C
OVA	C81E	08E3,C888
EMESG	0A61	08F3,C8F7,0A01,0A05,CA45,CA48,0A40,0A4E,0A50,0A51,0A54
ENO	012E	CCC0,0AFO
ENRIX	0A81	0AAF
EPA	C808	
ERDSW	0A52	CA5A
ERLOP	0A57	0A56
ERRET	0A24	C9A4,05A8,CA21
ERROR	C130	CCC0,0A52
EXITX	CA88	CA50,0AA2,CAA9,0A8C,0AP2,0A87
FEED	093E	C8C7,0EFA,CA22
HALT	0133	
HANOL	C85E	C826
INTED	0863	0821,0E35,C841,099D
INTEX	0866	C824,C828,C82A,C85E,C93F,0552,C962,058A,0AE0
KE000	0A6A	0A4F
KFF00	0A28	C9F9,CA1A
KOUNX	0ACD	CAAC,0AA0
K8C40	0A28	09C8,05D2,09D7
LCHAR	0A68	0A26,0A92
LGMS	0A78	CA6C,0A6D,0A70
LGMS1	CA7A	DA75
LOG	012F	CCC0,0A6E
LREAD	0A69	09C3,0A38
MARK	0A8E	C8ED,0EC4,08CC,0A80
MGR1	C890	C8C9,0EE1,C8FD,0511,091A
MLSCF	0809	C852,C876,C98C,0A5C,CA76,0A8A,DAD5
NIPES	0984	082E

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 18CC SYSTEM

PART NO. 2196358
PAGE 8

1054/55 FUNCTION TEST

NOLNE 0A29 C9FA,CA1C,CA12,0A17
NDPE CA03 C8E1
NRIPX CA99 C8BF
NIST 0A26 0872,C8A2,C9E8,0ACA,0A33
O 0915 C9C9
DNEEX 0AC4 0A85
PDSWX CA5C CA59
PEND CAFC C8CC
PID C7FF C668,C89C,C892,0897,C8A0,CAF2
PINT1 0850 0830,C83E,C846
PINT3 084E C82C,C83A,C842
PDFP 097F C927,C96D
PDINT C81F C859
PRDSW CA4C C8F5,C925,C935,09AC,C989,05DA,0A03,0A1B,0A47,DA57
PT8GN 0869 CAFE
PTENC CAEE CE64,C885
PTILZ C86C CE06,C8C7,C877
PTLCG CA6E C5F0,CA73
PTLO1 CA76 CA74
PTLO2 0A75 CA71
PTLO6 0A6E 0A7A
PUNH 0961 08C0,0914
RAD 0801 C8A0
RASH 091C C519
RDIT C9C0 C8CB,C8D2,CA4A
RDITA C9EC C9C3
RDITD 09F7 CA1C
RDITE 0A4A C9EA,09F0
RDITC 09E1 CAC9
RDITI C9FE C9DF
RDIT2 CA0A C9E6
RDIT3 CA10 CA15,0A34
RDIT4 CA2D CACB
RDIT5 CA3E CA38
RDIT6 0A35 CA30
READ 09C1 C9A9
RELOV 0132 CCCC,0AE8
REQDV C131 CCCC,C87F
RID C8CC C8EE,C897,C85E,C85C,C9A2
RMASK C978 C867,C931,C9AC,C5D1
ROFF 097E C937,C94A,C988,C5B4,C5D6
RRDY 092E 08C6,C8DF,C8E4,C8F5,C932,C93D,CA1F
RTCON 08AF C85E,CEAD
RTN1 C8BD 08C3
RTN1A 08C2 0ACE
RTN11 C8B7 C87F,C8BC,CADC
RTN2 C8C4 C8E0,C8C8
RTN2A C8C8 CACF
RTN3 C8CC C8E1,08D5
RTN3A 08D2 CAC0
RTN4 08DE C8F0
RTN4A 08E7 CAC1
RTN41 C8D7 C8E2
RTN5A 0901 09C8,C9CC,CAD2
RTN5B C9C3 C9C0
RTN5D 09CD C9C8
RTN5I 08F8 0883
SAVIT 0A27 09C8,09D8,CA07
SINT 0828 085E,085F
SORTS CACE 09A5
SRIPX CA9E CAC0
START 012D 00C0,0A5E,CA78,0A8C,CAD7
SWCMP 0386 C853,08FC,C91C
SWU 0802 C86D,C9F1,C9F5,0A2D
SW1 C803 C852,08D7,CEDE,CE78,C9CE
SW2 C804
SW3 0805 C9C3
TEND 0AD9 08C8,0AEC

DATE 28FEB66 C1MAY66
EC NO. 415120 415120A

PROG ID CB04-0
PAGE 8

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 18CC SYSTEM

PART NO. 2196358
PAGE 8A

1054/55 FUNCTION TEST

TEND1 CAE0 0AE5
TEND2 CAE6 0AE2
TERM 0808 C88A,0AEB
TIME 0A7F 092B,C538,C946,055A,0969,CAE6,0A88
TIMEX 0A60 0A82,0A83
TIME1 0A88 CA85
TRIAL CA2C C9FC,0A13
WHAT 0A8F 0A57
WRECK C8D6 08AB,CEB5,C917
X8SE 0988 09B1
X3SYX 098E 0853
XCHAR 0A67 08DC,0EE8,C9C6,057C,C9E1,CAC8,0A37,0A3E,0A8F,DA9B,
0A5E,0AAC,CAA5,0A84
XFEED 094D C8CC,CEE5
XIDFD 0974 C943,0557
XIDRR 0976 C8E7,C5C5,09CC,D5EC
XIDSD 0972 0821,CEEE,C91F,052F,C944,C553,C967,D5CD
XIDXX 0970 0886,CE89,C556,0966
XIT 0857 C820,CE4D,C85D
XKRDY 091E 088F,0ECE,C8E3,0513,0922,052D
XMASK 0979 0868,0521

DATE 28FEB66 C1MAY66
EC NO. 415120 415120A

PROG ID DB04-0
PAGE 8A

1627 FUNCTION TLST

TABLE 1 ROUTINE SELECTION

.....	1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1.
SENSE/PROGRAM	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
0 1 2 3 4 5 6 7	3. SET DESIRED ROUTINE NUMBER IN DATA ENTRY SWITCHES 0-15.
.....	4. PRESS CONSOLE INTERRUPT.
0 1 0 0 0 1 0 1	

DATA ENTRY SWITCHES	DESCRIPTION
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	
0 0 1	ROUTINE 1- PEN UP-DOWN OCTAGON TEST
0 1 0	ROUTINE 2- REGISTRATION TEST
0 1 1	ROUTINE 3- SWING TEST
1 0 0	ROUTINE 4- STRESS TEST (WINDMILL)
1 0 1	ROUTINE 5- MANUAL CONTROL

TABLE 2 MANUAL FUNCTION CONTROL

.....	1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.
SENSE/PROGRAM	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
0 1 2 3 4 5 6 7	3. SET DIRECTION CONTROL IN DATA ENTRY SWITCHES 8 THRU 13.
.....	4. PRESS CONSOLE INTERRUPT.
1 0 0 0 0 1 0 1	

DATA ENTRY SWITCHES	DESCRIPTION
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	
.....	NOT USED
.....	NOT USED
..... 1.....	PEN UP
..... 1.....	PEN LEFT
..... 1.....	PEN RIGHT
..... 1.....	PAPER UP
..... 1.....	PAPER DOWN
..... 1.....	PEN DOWN
1.....	SELECT SECOND 1627

3.3 PROGRAM WAITS

THIS PROGRAM HAS NO WAITS.

3.4 PROGRAM TERMINATION

STANDARD MONITOR TERMINATION

4. PRINTOUTS

ALL MESSAGES ARE GENERATED BY THE MONITOR PRINT ROUTINE AND ARE IN STANDARD MONITOR FORMAT.

DATE 28FEB66
LC NO. 415120

PRUG ID DB05-0
PAGE 2

1627 FUNCTION TEST

4.1 COMMAND MESSAGES

0500 C001 000R AAAA AIDE
THE PLOTTER IS NOT READY. THIS INDICATES THAT THERE IS NO POWER.

4.2 ERROR MESSAGES

0500 E001 000R AAAA ICED
THIS INDICATES A FAILURE TO RECEIVE AN INTERRUPT AFTER AN XID COMMAND WAS GIVEN.

0500 E002 000R AAAA A000
THE PLOTTER WAS BUSY WHEN THE DSW WAS SENSED. THIS WOULD INDICATE THAT AN XID COMMAND WAS IN PROCESS OR THE DSW BUSY BIT CANNOT BE TURNED OFF.

5. COMMENTS

5.1 ROUTINE 1 PEN UP-PEN DOWN OCTAGON TEST

THE PURPOSE OF THIS ROUTINE IS TO TEST THE CAPABILITY OF THE PLOTTER TO EXECUTE THE PEN UP AND PEN DOWN PLOTTER COMMANDS. IN THIS ROUTINE, AS IN THE OTHER PLOTTER PATTERN GENERATING ROUTINES, AN ADDRESS TABLE IS USED TO SELECT THE CORRECT PLOTTER COMMANDS. THE ADDRESS TABLE, IN TURN, POINTS TO A PAIR OF COMPUTER WORDS. ONE WORD CONTAINS A NUMBER WHICH INDICATES THE NUMBER OF TIMES THE OTHER WORD (THE PLOTTER COMMAND) IS TO BE EXECUTED.

THE PATTERN PLOTTED IN THIS FUNCTION TEST CONTAINS TWO ADJACENT OCTAGONS, WHOSE SIDES ARE ONE AND ONE HALF INCHES IN LENGTH. OCTAGON NO. 1 (LEFTMOST OCTAGON) IS PLOTTED IN A CLOCKWISE DIRECTION. OCTAGON NO. 2 (RIGHTMOST OCTAGON) IS PLOTTED IN A COUNTER CLOCKWISE DIRECTION.

THIS ROUTINE IS DESIGNED SO THAT, IF A PEN UP COMMAND IS NOT EXECUTED AS IT SHOULD BE, A LINE WILL BE DRAWN IN THE INNER PORTION OF THE OCTAGON. IF A PEN DOWN COMMAND IS NOT EXECUTED, A SIDE OF THE OCTAGON WILL BE MISSING. FIGURE 1 SHOWS AN EXAMPLE OF THE OUTPUT OF THIS ROUTINE.

5.2 ROUTINE 2 REGISTRATION TEST

THE FUNCTION OF THIS ROUTINE IS TO DETERMINE IF ANY ADJUSTMENTS ARE NEEDED IN THE PEN OR DRUM MOVEMENT MECHANISMS. FIGURE 2 SHOWS THE PATTERN GENERATED BY THIS ROUTINE. IF ANY OF THE LINES FAIL TO INTERSECT, SOME MECHANICAL ADJUSTMENT OF THE PLOTTER MAY BE NEEDED.

5.3 ROUTINE 3 SWING TEST

THE PURPOSE OF THIS ROUTINE IS TO TEST THE ABILITY OF THE PLOTTER TO PLOT LONG LINE SEGMENTS IN VARIOUS DIRECTIONS. THE PATTERN GENERATED BY THIS ROUTINE IS SO DESIGNED, THAT IF PLOTTER COMMANDS ARE NOT EXECUTED OR EXTRA COMMANDS ARE EXECUTED, THE CORNERS OF THE PATTERN WILL NOT JOIN. THIS TEST WILL ALSO SHOW UP ANY MALADJUSTMENT IN THE PEN OR DRUM MECHANISM.

THE METHOD USED IN GENERATING THE PATTERN IS AS FOLLOWS:

- THE LEFT AND TOP SIDES OF A SERIES OF SQUARES ARE DRAWN AS A CONTINUOUS LINE, VARYING IN SIZE FROM 10 TO 2 INCHES.
- THE RIGHT AND BOTTOM SIDES OF THE SERIES OF SQUARES ARE DRAWN IN ONE QUARTER INCH LINE SEGMENTS, JOINED TOGETHER, AND TOTALING THE LENGTH OF THE LEFT AND TOP SIDES.

DATE 28FEB66
LC NO. 415120

PRUG ID DB05-0
PAGE 2A

1627 FUNCTION TEST

- C. ON COMPLETING THE PLOTTING OF THE SQUARES, LINES ARE DRAWN (BOTH SEGMENTED AND CONTINUOUS) THRU THE CORNERS OF THE SQUARES. ALL OF THESE DIAGONAL LINES SHOULD INTERSECT THE CORNERS OF THE SQUARES PERFECTLY.

FIGURE 3 SHOWS THE PLOTTER PATTERN GENERATED BY THIS ROUTINE.

5.4 ROUTINE 4 STRESS TEST (WINDMILL PATTERN)

THE PURPOSE OF THIS ROUTINE IS TO EXERCISE ALL OF THE MECHANICAL FUNCTIONS OF THE PLOTTER. THIS OBJECTIVE IS ACCOMPLISHED BY PLOTTING A PATTERN OF TRIANGLES, ROUGHLY RESEMBLING A WINDMILL. EACH SIDE OF THE TRIANGLE CONSISTS OF A SERIES OF SHORT SAWTOOTH-LIKE SEGMENTS, WHICH TESTS THE ABILITY OF THE PLOTTER TO PLOT SHORT LINE SEGMENTS WITH ABRUPT CHANGES IN DIRECTION. A SET OF FIVE TRIANGLES IS PLOTTED, THE AXIS IS THEN ROTATED 90 DEGREES AND FIVE MORE TRIANGLES ARE PLOTTED IN THE SAME MANNER UNTIL, FINALLY, FOUR SETS OF TRIANGLES HAVE BEEN PLOTTED. WHEN THE TRIANGLES HAVE BEEN PLOTTED, A LINE IS DRAWN THRU THE INNERMOST POINTS OF THE TRIANGLES. THE RESULTANT PATTERN THEN APPEARS AS A WINDMILL WITH A DIAMOND SHAPED PATTERN CONNECTING THE INNER POINTS OF THE TRIANGLES. THE DIAMOND DESIGN SHOULD INTERSECT ALL OF THE INNER POINTS OF THE TRIANGLES IF THE PLOTTER IS ADJUSTED CORRECTLY. FIGURE 4 SHOWS THE PLOTTER PATTERN GENERATED BY THE ROUTINE.

5.5 ROUTINE 5 (MANUALLY SELECTED PLOTTER COMMANDS)

TO USE ROUTINE 5 IT MUST BE SELECTED IN FUNCTION 01. THE PURPOSE OF THIS ROUTINE IS TO PROVIDE TO THE FIELD ENGINEER THE CAPABILITY OF EXECUTING ANY PLOTTER COMMAND HE WISHES TO ON THE PLOTTER, BY MEANS OF ENTERING THE PLOTTER COMMAND IN THE CONSOLE BIT SWITCHES. THE PLOTTER WILL CONTINUE TO EXECUTE THE COMMAND UNTIL IT RECEIVES ANOTHER COMMAND FROM THE OPERATORS CONSOLE, OR A COMMAND OF ALL ZEROS IS RECEIVED WHICH WILL END THIS ROUTINE. THE ROUTINE MAY ALSO BE DISELECTED BY SELECTING ANOTHER ROUTINE. FOR COMMAND SETTING REFER TO TABLE 2 SECTION 3.3.3.

5.6 ROUTINE 6 END ROUTINE

THIS ROUTINE MAY BE SELECTED TO TERMINATE THE PROGRAM AND WILL RETURN CONTROL TO THE DIAGNOSTIC MONITOR END ROUTINE.

6.1 EDIT PROCEDURE

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES:

1. AN "E" IN COLUMN 1.
2. THE PID FOR THIS PROGRAM (COL. 2-3).
3. A TERMINATOR WORD OF "FFFF" (COL. 7-10).

[illegible]

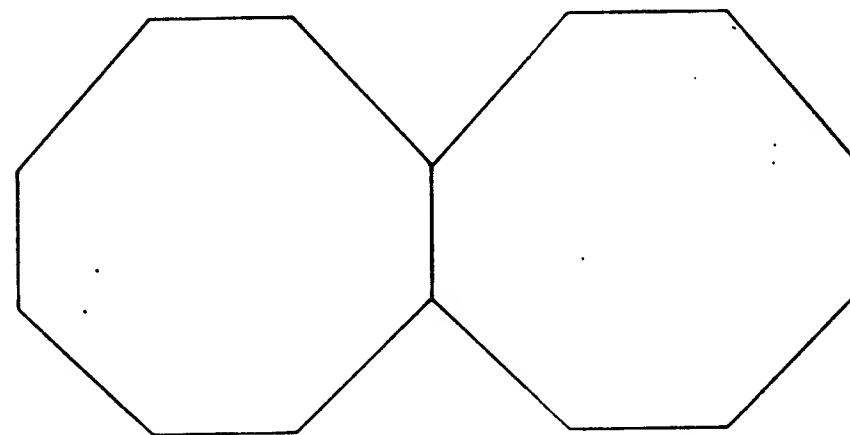
CARD 0 CONTAINS THE DDEF'S FOR THE 1627 PLOTTERS. IF THIS SYSTEM HAS ONLY ONE 1627, THEN ONLY ONE ENTRY IS REQUIRED IN THIS CARD.

CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.

1627 FUNCTION TEST

FIGURE 1

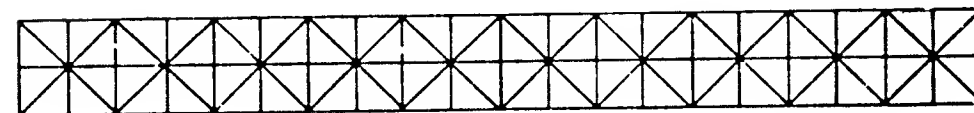
PATTERN FOR PEN UP/PEN DOWN TEST



SCALE: 3/4 = 1

FIGURE 2

PATTERN FOR REGISTRATION TEST

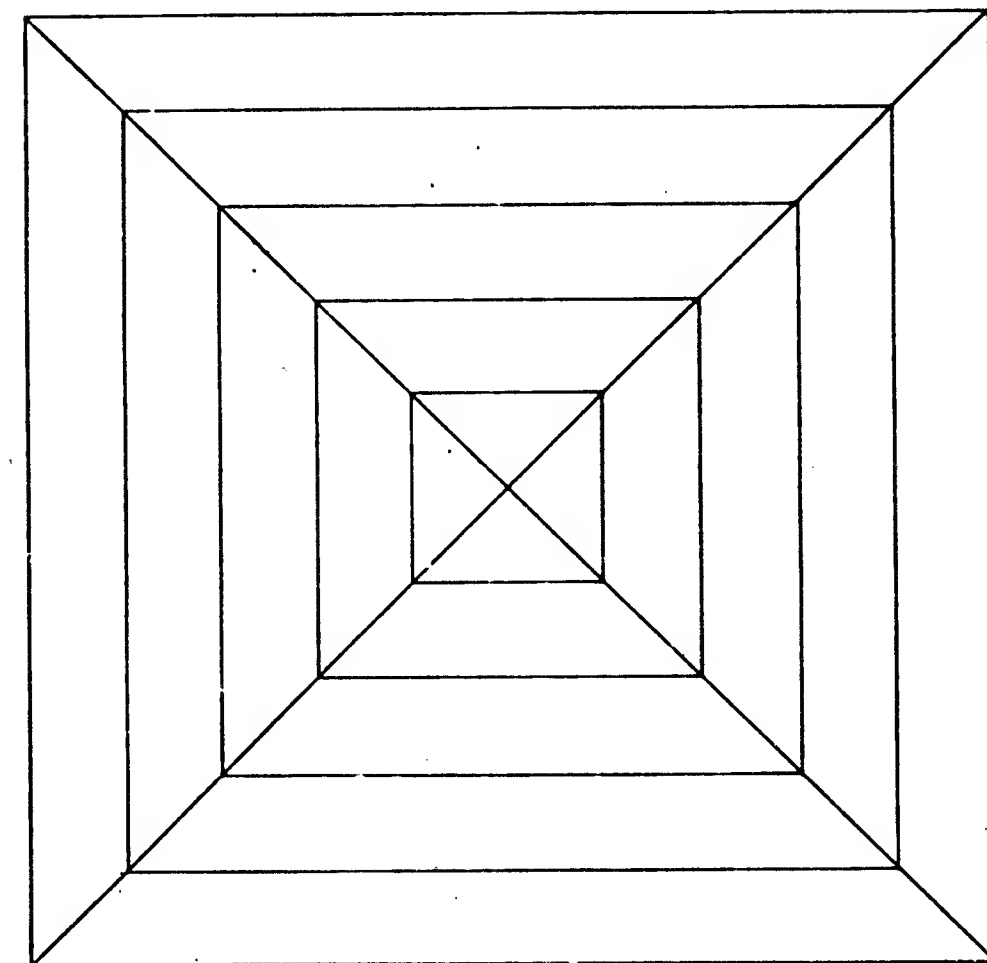


SCALE: 3/4 = 1

1627 FUNCTION TEST

FIGURE 3

SWING TEST - PATTERN

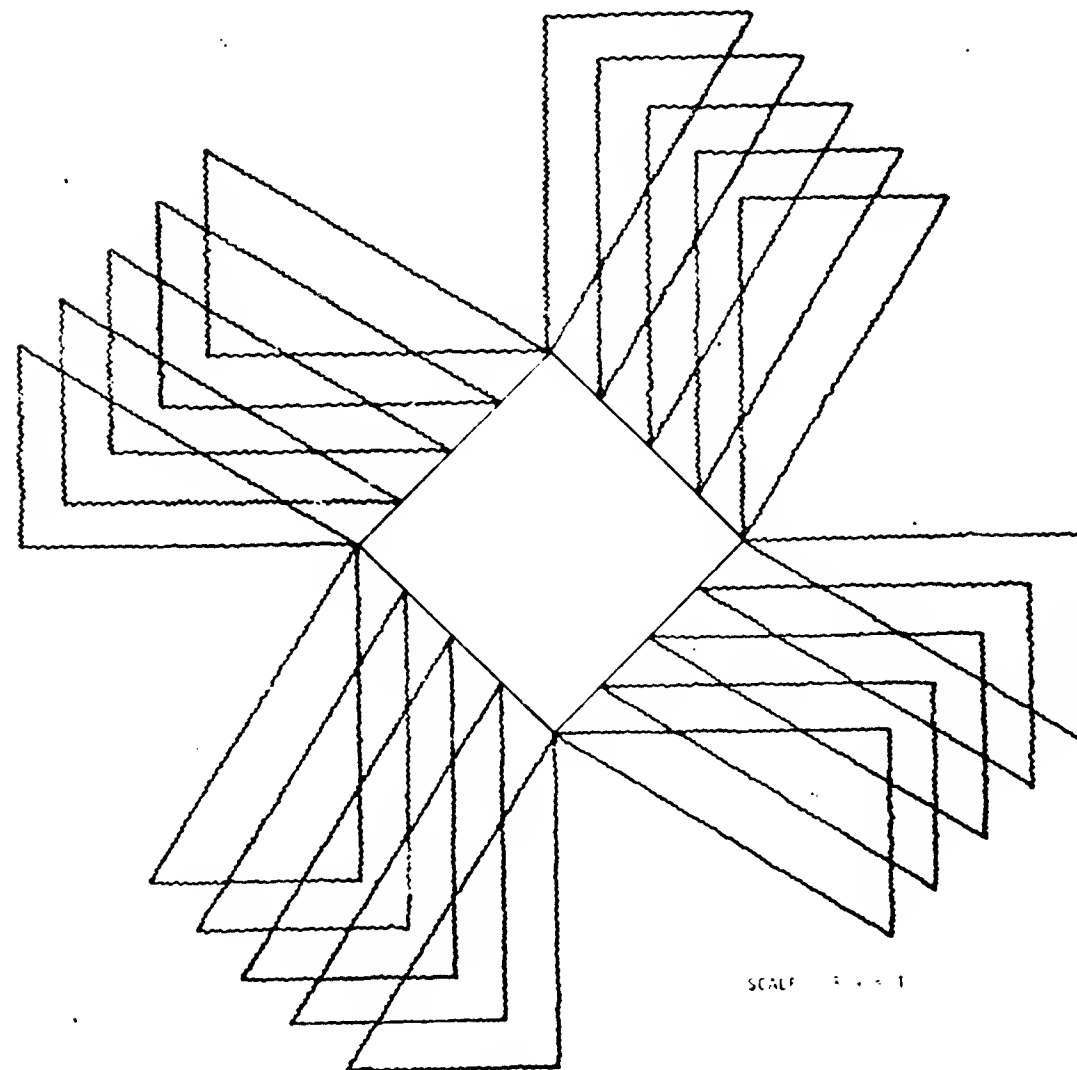


SCALE: 3/4 = 1

1627 FUNCTION TEST

FIGURE 14

STRESS TEST - WINDMILL PATTERN



IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196362
PAGE 1

1627 FUNCTION TEST

```

0000          ORG      **2047
012C          BEGIN EQU 300
012D          START EQU BEGIN+1
012E          ENO EQU START+1
012F          LOG EQU ENO+1
0130          ERROR EQU LOG+1
0131          REQDV EQU ERROR+1
0132          RELOV EQU REQOV+1
0133          HALT EQU RELOV+1
*
*
***** PROGRAM STARTER TABLE *****
*
07FF 0 0500    PIO OC /0500    PROG IDENTIFICATION
0800 0 0000    RIO OC /0000    ROUTINE NUMBER
0801 0 0000    RAD OC /0000    ROUTINE ADDRESS
0802 0 0000    SWO OC /0000    BIT SWITCH FUNC 0
0803 0 0000    SW1 OC /0000    BIT SWITCH FUNC 1
0804 0 0000    SW2 OC /0000    BIT SWITCH FUNC 2
0805 0 0000    SW3 DC /0000    BIT SWITCH FUNC 3
0806 1 0829    ILP DC RTO      INITIALIZATION AADR
0807 1 0829    LPA OC RTO      LOOP PROG AADR
0808 1 09CC    EPA DC RTOVR    ENO PROG AADR
0809 0 0000    MLSCF OC /0000    1ST MLSCF NORMAL
080A 0 0000    DC /0000    2ND MLSCF BUSY
080B 0 0000    OC /0000    3RD MLSCF INTR CK
080C 0 FFFF    TERM OC /FFFF    TERMINATOR
080D 1 08F0    DC PENO        PROGRAM ENO
080E 0 0000    OC /0000
080F 0 0000    DC /0000
0810 0 0000    OC /0000
0811 0 0000    OC /0000
0812 0 0000    DC /0000
*
0813 0 0000    EDIT1 DC /0000    PLOTTER 1
0814 0 0000    EDIT2 DC /0000    PLOTTER 2
*
0815 0 0000    EDIT DC /0000    INTR AND CHAN USED
*
***** ROUTINE INTERRUPT *****
*
0816 0 0000    PLOVA DC /0000    AREA CODE AND MOD
*
0817 0 0000    RECEV OC /0000    RETURN AADR
0818 01 0C000A92 XIO L SENSE SENSE OSW SE
081A 0 1000    KEEP1 NOP USE FOR TRAP
081B 01 F4000A70 EOR L K8000 REMOVE SERVICE REQST
081C 01 04000A0A STO L ERBIT SAVE OSW ERROR BITS
081F 01 67000A20 RECSW LOX L3 CONT GET MLSCF
0821 0 6BE7    STX 3 MLSCF SET MLSCF
0822 01 4C800817 BSC 1 RECEV RETURN TO MONITOR SX
*
***** DSW TABLE *****
*
0824 00 4480012C PLBGN BSI I BEGIN CALL TO MONITOR
0826 1 07FF    DC PIO
0827 1 0817    OC RECEV INTERRUPT ENTRY AADR
0828 0 FFFF    OC /FFFF
*
***** ROUTINE 0- INITIALIZATION *****
*

```

DATE 28FE866
EC NO. 415120

PROG IO 0805-0
PAGE 1

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196362
PAGE 1A

1627 FUNCTION TEST

```

0829 0 0000    * RTO DC /0000    RETURN AADR E
*
082A 0 COEA    * LO EDIT
082B 01 442809CC BSI L RTOVR,+2 RELEASE DEVICE MINE
082C 0 CO06    LD SW2
082E 0 180E    SRA 14
082F 01 4C040833 BSC L NBTWO,E 8CH ON BIT 1
0831 0 COE1    LD EDIT1 PLOTTER 1 ODEF
0832 0 7001    MOX XX
0833 0 COE0    NBTWO LO EDIT2 PLOTTER 2 ODEF
0834 0 00E0    XX STO EDIT DDEF CONTROLS
*
0835 00 44800131 LABEL BSI I REQOV REQUEST DEVICE SC
0837 1 0849    OC STOBV BUSY AADR
0838 1 0815    OC EDIT INTR AND CHAN
0839 1 0816    DC PLOVA AREA CODE AND MOD
083A 1 080C    DC TERM TERMINATOR
*
083B 0 6205    * LOX 2 5
083C 01 C6000A90 BUILD LO L2 SENT LOAD FUNCTION
083E 0 E014    ANO K0701
083F 0 E806    OR PLOVA AREA CODE
0840 01 06000A90 STO L2 SENT SET IN I/O COMMAND
0842 0 72FE    MOX 2 -2
0843 0 70FB    MOX BUILD
*
0844 01 6600084E * LOX L2 RUNIT LO XR2 WITH RE-ENTRY
0846 0 6AC2    STX 2 MLSCF SET MLSCF
0847 01 4C800829 BSC 1 RTO RETURN TO MONITOR X
*
0849 01 65000835 * STOBV LOX L1 LABEL GET BUSY AADR
084B 0 6980    STX 1 MLSCF SET MLSCF
084C 00 4C800120 BSC 1 START RETURN TO MONITOR X
*
084E 01 44000923 RUNIT BSI L BSWCK CHECK BIT SWITCH SC
0850 0 6201    LOX 2 1 SET ROUTINE 1
0851 01 4C00090F BSC L RTSET SET ROUTINE
*
0853 0 0701    * K0701 OC /0701 REMOVE AREA CODE MSK
*
***** ROUTINE 1- OCTAGON PEN UP-DOWN *****
*
0854 01 44000A38 RT1 BSI L REAOV CHECK STATUS ESC
*
0856 01 C4000A6F * LO L K0150 CONSTANT OF 150
0858 0 63F1    LOX 3 -15
0859 01 07000A83 BOOT STO L3 NN+15 STORE MOVE COUNT
085B 0 7302    MOX 3 2
085C 0 70FC    MOX BOOT
*
085D 01 65000A9A * LOX L1 RT1ST START COMMAND AADR
085F 01 60000A71 STX L1 LOOK POINTS TO COMMAND
0861 01 44000A0C BSI L OISP USE OISPATCH ROUTINE SC
*
0863 01 44000903 * BSI L BSWCK CHECK BIT SWITCH SC
0865 0 6202    LOX 2 2 NEW ROUTINE NUMBER
0866 01 4C00090F BSC L RTSET
*
***** ROUTINE 2- REGISTRATION TEST *****
*
0868 01 44000A38 RT2 BSI L REAOV CHECK STATUS ESC
*
086A 00 67000064 * LOX L3 100 SET UP COUNT
086C 01 6F000A82 STX L3 NW

```

DATE 28FE866
EC NO. 415120

PROG IO 0805-0
PAGE 1A

1627 FUNCTION TEST

```
086E 01 6F000A80 STX L3 SW
0870 01 6F000A74 STX L3 NM
0872 01 6F000A76 STX L3 SS
0874 01 6F000A7C STX L3 NE
0876 01 6F000A7E STX L3 SE
0878 00 67000032 LDX L3 50
087A 01 6F000A78 STX L3 EE
087C 01 6F000A7A STX L3 WW

087E 01 65000AEC LDX L1 RT2ST START COMMAND ADDR
0880 01 6D000A71 STX L1 LDDK POINTS TO COMMAND
0882 0 6305 LDX 3 5
0883 01 6F000A68 STX L3 EXTRA LOOP COUNT
0885 01 44000A0C BSI L DISP USE DISPATCH ROUTINE SC

0887 01 74010A71 MDX L LOOK,1 CHANGE COUNT
0889 00 670003E8 LDX L3 1000
088B 01 6F000A78 STX L3 EE

088D 01 44000A0C REG01 BSI L DISP USE DISPATCH ROUTINE SC
088F 01 74FE0A71 MDX L LOOK,-2 REDUCE LDDP COUNT
0891 01 74FF0A68 MDX L EXTRA,-1
0893 0 70F9 MDX REG01

0894 01 74030A71 MDX L LOOK,3
0896 0 6305 LDX 3 5
0897 01 6F000A68 STX L3 EXTRA LDDP COUNT

0899 01 44000A0C REG02 BSI L DISP USE DISPATCH ROUTINE SC
089B 01 74FE0A71 MDX L LDDK,-2
089D 01 74FF0A68 MDX L EXTRA,-1
089F 0 70F9 MDX REG02

08A0 0 630A LDX 3 10
08A1 01 6F000A68 STX L3 EXTRA
08A3 01 74030A71 MDX L LOOK,3

08A5 01 44000A0C REG03 BSI L DISP USE DISPATCH ROUTINE SC
08A7 01 74F80A71 MDX L LOOK,-8
08A9 01 74FF0A68 MDX L EXTRA,-1
08AB 0 70F9 MDX REG03

08AC 01 74090A71 MDX L LOOK,9
08AE 0 6332 LDX 3 50
08AF 01 6F000A76 STX L3 SS
08B1 00 670003E8 LDX L3 1000
08B3 01 6F000A7A STX L3 NM
08B5 01 44000A0C BSI L DISP USE DISPATCH ROUTINE SC

08B7 01 440009D3 BSI L BSWCK CHECK BIT SWITCH SC
08B9 0 6203 LDX 2 3
08BA 01 4C0009DF BSC L RTSET X

***** ROUTINE 3- SWING TEST *****

08BC 01 44000A38 RT3 BSI L READY CHECK STATUS ESC

08BE 0 6328 LDX 3 40
08BF 0 682C STX 3 SWNG2+1
08C0 00 670000C8 LDX L3 200
08C2 01 6F000A74 STX L3 NM
08C4 0 6364 LDX 3 100
08C5 01 6F000A7C STX L3 NE
08C7 0 6332 LDX 3 50
08C8 01 6F000A78 STX L3 EE
```

DATE 28FEB66
EC NO. 415120PRDG ID 0805-0
PAGE 2

1627 FUNCTION TEST

```
08CA 01 65000808 LDX L1 RT3ST PART COMMAND ADDR
08CC 01 6D000A71 STX L1 LOOK
08CE 01 44000A0C BSI L DISP USE DISPATCH ROUTINE SC

08D0 01 74010A71 MDX L LOOK,1
08D2 00 670001F4 LDX L3 500
08D4 01 6F000A82 STX L3 NM
08D6 01 6F000A7E STX L3 SE
08D8 01 6F000A80 STX L3 SW
08DA 0 6319 LDX 3 25
08DB 01 6F000A76 STX L3 SS
08DD 01 6F000A7A STX L3 WW
08DF 00 670003E8 LDX L3 1000
08E1 01 6F000A74 STX L3 NM
08E3 01 6F000A78 STA L3 EE

08E5 0 6305 LDX 3 5
08E6 01 6F000A72 STX L3 SQRT SQUARE COUNT

08E8 0 6302 SWNG1 LDX 3 2
08E9 01 6F000A73 STX L3 TRICT SEGMENTED LINE COUNT
08EB 00 67000028 SWNG2 LDX L3 40
08ED 01 6F000A68 STX L3 EXTRA LOOP COUNT
08EF 01 44000A0C SWNG3 BSI L DISP USE DISPATCH ROUTINE SC
08F1 01 74FF0A71 MDX L LOOK,-1
08F3 01 74FF0A68 MDX L EXTRA,-1
08F5 0 70F9 MDX SWNG3 DO ANOTHER SEGMENT

08F6 01 74020A71 MDX L LOOK,2
08F8 01 74FF0A73 MDX L TRICT,-1
08FA 0 70F0 MDX SWNG2 DO ANOTHER LINE

08FB 01 749C0A74 MDX L NN,-100
08FD 01 749C0A74 MDX L NN,-100
08FF 0 1000 MDX WILL MDP THIS
0900 01 749C0A78 MDX L EE,-100
0902 01 749C0A78 MDX L EE,-100
0904 0 1000 MDX WILL SKIP THIS
0905 01 74F808EC MDX L SWNG2+1,-8 ADJ LINE LENGTH
0907 0 1000 MDX WILL SKIP THIS
0908 01 44000A0C BSI L DISP USE DISPATCH ROUTINE SC
090A 01 74F70A71 MDX L LOOK,-9
090C 01 74FF0A72 MDX L SQRT,-1
090E 0 70D9 MDX SWNG1 DO ANOTHER SQUARE

090F 01 740A0A71 MDX L LOOK,10
0911 00 670003E8 LDX L3 1000
0913 01 6F000A74 STX L3 NM
0915 01 6F000A76 STX L3 SS

0917 01 44000A0C BSI L DISP USE DISPATCH ROUTINE SC
0919 01 74010A71 MDX L LOOK,1
091B 0 6302 LDX 3 2
091C 01 6F000A73 STX L3 TRICT SEGMENTED LINE COUNT
091E 0 6319 LDX 3 25
091F 01 6F000A82 STX L3 NM
0921 01 6F000A7C STX L3 NE

0923 0 6314 SWNG5 LDX 3 20
0924 01 6F000A68 STX L3 EXTRA LOOP COUNT
0926 01 44000A0C SWNG4 BSI L DISP USE DISPATCH ROUTINE SC
0928 01 74FF0A71 MDX L LDDK,-1
092A 01 74FF0A68 MDX L EXTRA,-1
092C 0 70F9 MDX SWNG4 DO ANOTHER LINE

092D 01 74020A71 MDX L LOOK,2
092F 01 74FF0A73 MDX L TRICT,-1
0931 0 70F1 MDX SWNG5 DO ANOTHER LINE
```

DATE 28FEB66
EC NO. 415120PRG ID 0805-0
PAGE 2A

1627 FUNCTION TEST

```
*
0932 01 44000903      BSI L BSWCK CHECK BIT SWITCHES SC 80502680
0934 0 6204           LDX 2 4 NEW ROUTINE NUMBER 80502690
0935 01 4C0009DF      BSC L RTSET X 80502700
                        * 80502710
                        * 80502720
                        * 80502730
***** ROUTINE 4- WINOMILL DESIGN ***** 80502740
                        * 80502750
                        * 80502760
0937 01 44000A38      RT4 BSI L READY CHECK STATUS ESC 80502770
                        * 80502780
                        * 80502790
0939 00 67000164      LDX L3 356 SET UP COUNT 80502800
093B 01 6F000A7C      STX L3 NE 80502810
093D 01 6F000A74      STX L3 NN 80502820
093F 01 67000828      LOX L3 RT4ST START COMMAND AORR 80502830
0941 01 6F000A71      STX L3 LOOK 80502840
0943 01 44000A0C      BSI L DISP USE DISPATCH ROUTINE SC 80502850
                        * 80502860
                        * 80502870
0945 01 74010A71      MOX L LOOK,1 80502880
0947 0 62F1           LDX 2 -15 80502890
0948 01 C4000A6D      LD L K0002 MOVE COUNT 80502900
094A 01 06000A83      WMILL ST0 L2 NN+15 80502910
094C 0 7202           MOX 2 2 80502920
0940 0 70FC           MOX WMILL 80502930
                        * 80502940
094E 01 67000A7C      LOX L3 NE 80502950
0950 0 401B           BSI TCNTL USE TRIANGLE CONTROL SC 80502960
                        * 80502970
0951 01 67000A7E      LDX L3 SE 80502980
0953 0 4018           BSI TCNTL USE TRIANGLE CONTROL SC 80502990
                        * 80503000
0954 01 67000A80      LCX L3 SW 80503010
0956 0 4015           BSI TCNTL USE TRIANGLE CONTROL SC 80503020
                        * 80503030
0957 01 67000A82      LDX L3 NW 80503040
0959 0 4012           BSI TCNTL USE TRIANGLE CONTROL SC 80503050
                        * 80503060
095A 00 670000C8      LCX L3 200 80503070
095C 01 6F000A82      STX L3 NW 80503080
095E 01 6F000A7C      STX L3 NE 80503090
0960 01 6F000A7E      STX L3 SE 80503100
0962 01 6F000A80      STX L3 SW 80503110
0964 01 74010A71      MDX L LOOK,1 80503120
0966 01 44000A0C      BSI L DISP DRAW SQUARE SC 80503130
                        * 80503140
0968 0 406A           BSI BSWCK CHECK BIT SWITCH SC 80503150
0969 0 6206           LDX 2 6 NEW ROUTINE X 80503160
096A 01 4C00090F      BSC L RTSET 80503170
                        * 80503180
                        * 80503190
***** TRIANGLE CONTROL ***** 80503200
                        * 80503210
096C 0 0000           TCNTL OC /0000 RETURN AORR SE 80503220
0960 0 6828           STX 3 CHG1+1 PR01 80503230
096E 0 682E           STX 3 CHG2+1 PR02 80503240
096F 0 6835           STX 3 CHG3+1 PR03 80503250
0970 0 6305           LOX 3 5 80503260
0971 01 6F000A73      STX L3 TRICT TRIANGLE COUNT 80503270
                        * 80503280
0973 0 6356           RUN LOX 3 86 START TRIANGLE 80503290
0974 01 6F000A6B      STX L3 EXTRA 80503300
                        * 80503310
0976 01 44000A0C      SIDE1 BSI L DISP SIDE ONE SC 80503320
0978 01 74FE0A71      MOX L LOOK,-2 80503330
097A 01 74FF0A6B      MOX L EXTRA,-1 80503340
097C 0 70F9           MOX SIDE1 80503350
                        *
```

DATE 28FEB66
EC NO. 415120PR0G 10 0805-0
PAGE 3

1627 FUNCTION TEST

```
097D 01 74030A71      MOX L LOOK,3 80503360
097F 0 632B           LDX 3 43 80503370
0980 01 6F000A6B      STX L3 EXTRA 80503380
                        * 80503390
0982 01 44000A0C      SIDE2 BSI L DISP SIDE TWO SC 80503400
0984 01 74FE0A71      MOX L LOOK,-2 80503410
0986 01 74FF0A6B      MOX L EXTRA,-1 80503420
0988 0 70F9           MDX SIDE2 80503430
                        * 80503440
0989 01 74030A71      MDX L LOCK,3 80503450
098B 0 6356           LDX 3 86 80503460
098C 01 6F000A6B      STX L3 EXTRA 80503470
                        * 80503480
098E 01 44000A0C      SIDE3 BSI L DISP SIDE THREE SC 80503490
0990 01 74FD0A71      MOX L LOOK,-3 80503500
0992 01 74FF0A6B      MOX L EXTRA,-1 80503510
0994 0 70F9           MDX SIDE3 80503520
                        * 80503530
0995 01 74300A7C      CHG1 MOX L NE,-48 PM01 80503540
0997 01 74C40A71      MOX L LOCK,4 80503550
0999 01 74FF0A73      MOX L TRICT,-1 TRIANGLE COUNT 80503560
099B 0 7006           MDX TOP 80503570
                        * 80503580
099C 01 74000A7C      CHG2 MDX L NE,-48 PM02 80503590
099E 01 74030A71      MOX L LOCK,3 80503600
09A0 01 4C80096C      BSC I TCNTL RETURN TO PROG SX 80503610
                        * 80503620
09A2 01 44000A0C      TOP BSI L DISP USE DISPATCH ROUTINE SC 80503630
09A4 01 74000A7C      CHG3 MOX L NE,-48 PM03 80503640
09A6 01 74F30A71      MOX L LOOK,-13 80503650
09A8 0 70CA           MDX RUN DD ANDTHER TRIANGLE 80503660
                        * 80503670
***** ROUTINE 5- MANUAL CONTROL ***** 80503680
                        * 80503690
                        * 80503700
                        * 80503710
09A9 01 6700086D      RT5 LOX L3 RT5ST START COMMAND AORR E 80503720
09AB 01 6F000A71      STX L3 LOOK POINTS TO COMMAND 80503730
09AD 01 C4000804      LO L SW2 80503740
09AF 0 1002           SLA 2 80503750
09B0 0 4820           BSC 2 80503760
09B1 0 7007           MOX RT5A 80503770
09B2 0 4020           BSI BSWCK CHECK BIT SWITCH SC 80503780
09B3 01 670009A9      LDX L3 RT5 PICK UP MLSCF ENTRY 80503790
09B5 01 6F000809      STX L3 MLSCF SET MLSCF 80503800
09B7 00 4C800120      BSC I START LOOP THRU MONITOR X 80503810
                        * 80503820
09B9 01 670009B9      RT5A LDX L3 RT5A MODIFY RETURN AORR 80503830
09BB 01 6F000820      STX L3 RECSW+1 FOR INTERRUPT RTNE. 80503840
09BD 01 C4000804      LO L SW2 BIT SWITCH STORAGE 80503850
09BF 0 1802           SRA 2 80503860
09C0 0 100A           SLA 10 80503870
09C1 01 04000A97      STD L S8SW2 NEW COMMAND 80503880
09C3 01 44200A0C      BSI L DISP,2 TEST FOR END OF RTNE SC 80503890
09C5 01 67000A2D      LOX L3 CONT 80503900
09C7 01 6F000820      STX L3 RECSW+1 RESTORE RETURN AORR. 80503910
09C9 0 4009           BSI BSWCK CHECK BIT SWITCH SC 80503920
                        * 80503930
                        * 80503940
09CA 00 4C80012E      RTENO BSC I ENO GO TO MONITOR X 80503950
                        * 80503960
09CC 0 0000           RTOVR DC /0000 RETURN ADDR SE 80503970
                        * 80503980
09CD 00 44800132      BSI I RELOV RELEASE OEVCE SC 80503990
09CF 1 0815           DC E01T 80504000
09D0 1 080C           DC TERM 80504010
09D1 01 4C8009CC      BSC I RTOVR RETURN TO PROGRAM SX 80504020
                        * 80504030
```

DATE 28FEB66
EC NO. 415120PR0G 10 0805-0
PAGE 3A

1627 FUNCTION TEST

```
*****
***** COMMON SUB ROUTINES *****
*****
***** ROUTINE BIT SWITCH CHECK *****
09D3 0 0000      BSMCK DC /0000 RETURN ADDRESS SE
09D4 01 C40008D3 LD L SW1 BIT SWITCH STORAGE
09D6 01 4C980903 BSC I BSMCK,+- BCH ON ZERO SX
09D8 01 E4000A6E AND L K00D7 SAVE ROUTINE NUMBER
09DA 01 D40DD800 STO L R10 STORE ROUTINE NUMBER
09DE 01 66800800 LOX I2 R10 LOAD XR 2 INDERCT
09DE 0 7002 MDX RERUN

09DF 01 6E0008D0 RTSET STX L2 R10 STORE ROUTINE NUMBER
09E1 01 C60009E9 RERUN LD L2 RTABL GET ROUTINE ADDR AND
09E3 01 D40D0809 STO L MLSCF SET MLSCF
09E5 01 D40D0801 STO L RAD ROUTINE ADDR
09E7 00 4C800120 BSC I START RETURN TO MONITOR SX

09E9 0 0000 RTABL DC /0000 ROUTINE TABLE
09EA 1 0854 DC RT1 PEN UP-DOWN OCTAGON
09EB 1 0868 DC RT2 REGISTRATION TEST
09EC 1 088C OC RT3 SWING TEST
09ED 1 0937 DC RT4 WINOMILL TEST
09EE 1 09A9 DC RT5 MANUAL CONTROL
09EF 1 09CA DC RTEND ROUTINE END

***** ROUTINE BUSY *****
09F0 0 0000 BUSY DC /0000 RETURN ADDR SE
09F1 01 CC000A8E LDO L MBUSY MSG- BUSY
09F3 0 4002 BSI ERR1 USE ERROR ROUTINE SC
09F4 01 4C8D09FD BSC I BUSY TURN TO PROGRAM SX

***** ROUTINE ERROR TYPE OUT *****
09F6 0 D000 ERR1 OC /0000 RETURN ADDR SE
09F7 03 44800130 ERBSY BSI I ERROR CALL MONITOR ERROR SC
09F9 1 0A06 DC ERMSG MESSAGE ADDR
09FA 1 09FF DC REPT1 BUSY ADDR
09FB 1 09FF DC REPT1 ERROR ADDR

09FC D1 658009F6 LDX I1 ERR1
09FE 0 7002 MDX OUT

09FF 01 650009F7 REPT1 LDX L1 ERBSY
0A01 01 6D000809 OUT STX L1 MLSCF SET MLSCF
0A03 00 4C800120 BSC I START RETURN TO MONITOR SX

0A06 0 D000 BSS E 0
0A06 0 0003 ERMSG OC /0000 WORD COUNT
0A07 0 D000 OC /0000 HEX CONTROL
0A08 0 E003 DC /E003 MESSAGE NUMBER
0A09 0 B1EE OC /B1EE CODED MESSAGE
0A0A 0 0000 ERBIT OC /0000 BITS IN ERROR
0A0B 0 0000 D2BE DC /0000 CORRECT BITS

***** ROUTINE DISPATCH *****
```

DATE 28FE866
EC NO. 415120PRG 10 0805-0
PAGE 4

1627 FUNCTION TEST

```
0A0C 0 0000 DISP DC /0000 RETURN ADDR SE
0A00 01 6580DA71 NEXT LDX I1 LOOK RESTORE XR 1
0A0F 0 6961 STX I1 LOOK SAVE XR 1
0A10 00 C08D0000 LDO I1 0 GET COUNT + DIRECTION
0A12 01 DC000A98 STD I1 COUNT

0A14 01 4C980ADC * BSC I OISP,+ BCH ON ZERO SX
0A16 0 4021 PLOT BSI READY CHECK STATUS SC
0A17 0 D87C XIO MARK MOVE COMMAND
0A18 0 0877 XIO SEPT SENSE DSM
0A19 0 D0F0 STO ERBIT SAVE ERROR BITS
0A1A 0 F052 EOR K0002 CHECK BUSY
0A1B 01 4C180A1F BSC L TIME,+ BCH ON ZERO
0A1D 0 D0E0 STO D2BE CORRECT DSM BITS
0A1E 0 4007 BSI ERR1 USE ERROR ROUTINE SC

0A1F 00 65000700 * TIME LOX L1 /D700 TIMING CONSTANT
0A21 0 6948 STX I1 CONST
0A22 01 65000A28 HOPY LOX L1 HOP GET MLSCF
0A24 01 60000808 STX L1 MLSCF+2 SET MLSCF
0A26 00 4C600120 BSC I START RETURN TO MONITOR SX

0A28 01 74FF0A6A * HOP MOX L CONST,-1 REDUCE TIMER SE
0A2A 0 70F7 MOX HOPY
0A2C 0 C860 LDO MNINT MSG- NO INTERRUPT
0A2E 0 4023 BSI TYPE USE TYPE ROUTINE SC

0A20 01 74FF0A98 * CONT MDX L COUNT,-1 REDUCE COUNT
0A2F 0 70E7 MDX PLOT

0A30 01 74010A71 * MOX L LOOK,1 INCREASE LOOK BY 1
0A32 0 700A MDX NEXT

***** ROUTINE NOT READY *****
0A33 0 D000 NRDY OC /0000 RETURN ADDR SE
0A34 0 C855 LDO MNRDY MSG- NOT READY
0A35 0 401A BSI TYPE USE TYPE ROUTINE SC
0A36 01 4C800A33 BSC I NRDY RETURN TO PROGRAM SX

***** ROUTINE STATUS CHECK *****
0A38 0 D000 READY DC /0000 RETURN ADDR SE
0A39 0 0858 XIO SENSE SENSE DSM AND RESET
0A3A 01 4C980A38 BSC I READY,+ BCH ON ZERO SX
0A3C 0 D0C0 STO ERBIT SAVE DSM
0A3D 01 4404DA33 BSI L NRDY,E BCH IF BIT 15 ON SC
0A3F 0 C0CA LD ERBIT GET ERROR DSM
0A40 0 1801 SRA 1
0A41 01 440409F0 BSI L BUSY,E BCH IF BIT 14 ON SC
0A43 0 C0C6 LD ERBIT GET ERROR DSM
0A44 0 1802 SRA 2
0A45 01 442009F6 BSI L ERR1,2 BCH ON BITS SC
0A47 0 D84A XIO SENSE SENSE DSM AND RESET
0A48 01 4C980A38 NOT BSC I READY,+ RETURN TO PROG ON 0 SX
0A4A 01 65000A47 LOX L1 NOT GET MLSCF
0A4C 01 60000309 STX L1 MLSCF SET MLSCF
0A4E 00 4C800120 BSC I START RETURN TO MONITOR SX

***** ROUTINE TYPE *****
0A50 0 0000 TYPE DC /0000 RETURN ADDR SE
0A51 0 D816 STD MSG MSG AND NUMBER
0A52 01 C4000802 LD L SWO BIT SWITCH STORAGE
```

DATE 28FE866
EC NO. 415120PRG 10 0805-0
PAGE 4A

PART NO. 2196362
PAGE 5

1627 FUNCTION TEST

DATA	ADDRESS	VALUE	OPERATION	STATUS	DESCRIPTION	REMARKS
0A54	0	100C	SLA	12		
0A55	01	4CA80A50	8SC	I	TYPE,+Z	BCH ON BIT 13

0A57	00	448C012F	LOGAG	8SI	1	LOG
0A59	1	0A66	DC	LOGM		CALL MONITOR LOG
0A5A	1	0A5F	DC	LOG8		ADDR OF MSG
0A5B	0	0000	DC	/0000		BUSY ADDR

0A5C	01	65800A50	LDX	11	TYPE	GET MLSCF
0A5E	0	7002	MDX		OUT1	

0A5F	01	65000A57	LOG8	LDX	L1	LOGAG
0A61	01	6000080A	OUT1	STX	L1	MLSCF+1
0A63	00	4C80012D		8SC	I	START

0A66	0	0000		8SS	E	0
0A66	0	0301	LOGM	DC	/0001	WORD COUNT
0A67	0	0000		DC	/0000	HEX
0A68	0	0000	MSG	DC	/0000	MESSAGE NUMBER
0A69	0	0000		DC	/0000	

0A6A	0	0000	CONST	DC	/0000	
0A6B	0	0000	EXTRA	DC	/0000	
0A6C	0	0000	K0000	DC	/0000	
0A6D	0	0002	K0002	DC	/0002	
0A6E	0	0007	K0007	DC	/0007	
0A6F	0	0096	K0150	DC	150	
0A70	0	8000	K8000	DC	/8000	
0A71	0	0000	LOOK	DC	/0000	START OF STRING
0A72	0	0000	SQRCT	DC	/0000	SQUARE COUNT
0A73	0	0000	TRICT	DC	/0000	TRIANGLE COUNT

0A74	0	0000	NN	DC	/0000	MOVE COUNT
0A75	0	4000		DC	/4000	DIRECTION- NORTH
0A76	0	0000	SS	DC	/0000	
0A77	0	2000		DC	/2000	- SOUTH
0A78	0	0000	EE	DC	/0000	
0A79	0	1000		DC	/1000	- EAST
0A7A	0	0000	WW	DC	/0000	
0A7B	0	0800		DC	/0800	- WEST
0A7C	0	0000	NE	DC	/0000	
0A7D	0	5000		DC	/5000	- NORTHEAST
0A7E	0	0000	SE	DC	/0000	
0A7F	0	3000		DC	/3000	- SOUTHEAST
0A80	0	0000	SW	DC	/0000	
0A81	0	2800		DC	/2800	- SOUTHWEST
0A82	0	0000	NW	DC	/0000	
0A83	0	4800		DC	/4800	- NORTHWEST
0A84	0	0001	PENUP	DC	/0001	
0A85	0	0400		DC	/0400	- PEN UP
0A86	0	0001	PENOW	DC	/0001	
0A87	0	8000		DC	/8000	- PEN DOWN
0A88	0	044C	LEFT	DC	1100	
0A89	0	0800		DC	/0800	- WEST

0A8A	0	C001	MNRDY	DC	/C001	
0A8B	0	A10E		DC	/A10E	MSG- NOT READY

DATE 28FEB66
EC NO. 415120

PROG ID 0805-0
PAGE 5

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196362
PAGE 5A

1627 FUNCTION TEST

0A8C	0	E001	MNINT	DC	/E001		80506080
0A8D	0	1CED		DC	/1CED	MSG- NO INTERRUPT	80506090
0A8E	0	E002	M8USY	DC	/E002		80506100
0A8F	0	AD00		DC	/A000	MSG- BUSY	80506110
			*				80506120
0A90	0	0000	SENT	DC	/0000	SENSE OSW	80506130
0A91	0	0700		DC	/0700		80506140
0A92	0	0000	SENSE	DC	/0000	SENSE OSW + RESET	80506150
0A93	0	0701		DC	/0701		80506160
0A94	1	0A99	MARK	DC	COMAD	DIRECTION COMMAND	80506170
0A95	0	0100		DC	/0100		80506180
			*				80506190
0A96	0	1100	8SWCT	DC	/1100	CMD EXECUTE CNTR	80506200
0A97	0	0000	S8SW2	DC	/0000	MANUAL COMMAND STG	80506210
0A98	0	0000	COUNT	OC	/0000		80506220
0A99	0	0000	COMAD	DC	/0000		80506230
			*				80506240
0A9A	1	0A84	RTIST	DC	PENUP	RT 1 START	80506250
0A9B	1	0A68		OC	LEFT		80506260
0A9C	1	0A7C		DC	NE		80506270
0A9D	1	0A86		DC	PENDW	START 1ST OCTAGON	80506280
0A9E	1	0A74		DC	NN	1ST SIOE	80506290
0A9F	1	0A84		DC	PENUP		80506300
0AA0	1	0A78		DC	EE		80506310
0AA1	1	0A7C		DC	NE		80506320
0AA2	1	0A86		DC	PENDW		80506330
0AA3	1	0A7E		DC	SE	2ND SIDE	80506340
0AA4	1	0A84		DC	PENUP		80506350
0AA5	1	0A80		DC	SW		80506360
0AA6	1	0A76		DC	SS		80506370
0AA7	1	0A86		OC	PENDW		80506380
0AA8	1	0A7A		DC	NW	3RD SIDE	80506390
0AA9	1	0A84		DC	PENUP		80506400
0AAA	1	0A74		DC	NN		80506410
0AAB	1	0A82		DC	NW		80506420
0AAC	1	0A86		DC	PENDW		80506430
0AAD	1	0A7C		DC	NE	4TH SIDE	80506440
0AAE	1	0A84		DC	PENUP		80506450
0AAF	1	0A7E		DC	SE		80506460
0AB0	1	0A78		DC	EE		80506470
0AB1	1	0A86		OC	PENDW		80506480
0AB2	1	0A76		DC	SS	5TH SIDE	80506490
0AB3	1	0A84		DC	PENUP		80506500
0AB4	1	0A7A		DC	NW		80506510
0AB5	1	0A80		OC	SW		80506520
0AB6	1	0A86		DC	PENDW		80506530
0AB7	1	0A82		DC	NW	6TH SIDE	80506540
0AB8	1	CA84		DC	PENUP		80506550
0AB9	1	0A7C		DC	NE		80506560
0ABA	1	0A74		DC	NN		80506570
0ABB	1	0A86		DC	PENOW		80506580
0ABC	1	0A78		DC	EE	7TH SIDE	80506590
0ABD	1	0A84		OC	PENUP		80506600
0ABE	1	0A76		DC	SS		80506610
0ABF	1	0A7E		OC	SE		80506620
0AC0	1	0A86		DC	PENDW		80506630
0AC1	1	0A80		DC	SW	8TH SIOE	80506640
0AC2	1	0A84		DC	PENUP		80506650
0AC3	1	0A78		DC	EE		80506660
0AC4	1	0A78		DC	EE		80506670
0AC5	1	0A86		DC	PENDW	START SECOND OCTAGON	80506680
0AC6	1	0A78		DC	EE	1ST SIDE	80506690
0AC7	1	0A84		DC	PENUP		80506700
0AC8	1	0A74		DC	NN		80506710
0AC9	1	0A7C		DC	NE	</	

DATE 28FE866
EC NO. 415120

PROG 1D 0805-0
PAGE 5A

1627 FUNCTION TEST

0ACD 1	0A80	DC	SW	
0ACE 1	0A7A	DC	NN	
0ACF 1	0A86	DC	PENDW	
0A00 1	0A76	DC	SS	3RD SIDE
0AD1 1	0A84	DC	PENUP	
0AD2 1	0A78	DC	EE	
0AD3 1	0A7E	DC	SE	
0AD4 1	0A86	DC	PENDW	
0AD5 1	0A7C	DC	NE	4TH SIDE
0AD6 1	0A84	DC	PENUP	
0A07 1	0A82	DC	NN	
0A08 1	0A74	DC	NN	
0AD9 1	0A86	DC	PENOW	
0ADA 1	0A7A	DC	NN	5TH SIDE
0AD8 1	0A84	DC	PENUP	
0A0C 1	0A76	DC	SS	
0A0D 1	0A80	DC	SW	
0ADE 1	0A86	DC	PENOW	
0ADF 1	0A7E	DC	SE	6TH SIDE
0AE0 1	0A84	DC	PENUP	
0AE1 1	0A7C	DC	NE	
0AE2 1	0A78	DC	EE	
0AE3 1	0A86	DC	PENOW	
0AE4 1	0A74	DC	NN	7TH SIDE
0AE5 1	0A84	DC	PENUP	
0AE6 1	0A7A	DC	NN	
0AE7 1	0A82	DC	NN	
0AE8 1	0A86	DC	PENOW	
0AE9 1	0A80	DC	SW	8TH SIDE
0AEA 1	0A84	DC	PENUP	
0AEB 1	0A6C	DC	K0000	END OF ROUTINE
* RT2ST				
0AEC 1	0A84	DC	PENUP	RT 2 START
0AED 1	0A88	DC	LEFT	
0AEE 1	0A7C	DC	NE	
0AEF 1	0A74	DC	NN	
0AF0 1	0A7A	DC	NN	
0AF1 1	0A6C	DC	K0000	RETURN CNTL TO PROG
0AF2 1	0A86	DC	PENOW	START FIGURE
0AF3 1	0A78	DC	EE	
0AF4 1	0A82	DC	NN	
0AF5 1	0A80	DC	SW	
0AF6 1	0A6C	DC	K0000	RETURN CNTL TO PROG
0AF7 1	0A74	DC	NN	
0AF8 1	0A7E	DC	SE	
0AF9 1	0A7C	DC	NE	
0AFA 1	0A6C	DC	K0000	RETURN CNTL TO PROG
0AFB 1	0A76	DC	SS	
0AFC 1	0A84	DC	PENUP	
0AFD 1	0A7A	DC	NN	
0AFE 1	0A86	DC	PENOW	
0AFF 1	0A74	DC	NN	
0B00 1	0A84	DC	PENUP	
0B01 1	0A7A	DC	NN	
0B02 1	0A86	DC	PENDW	
0B03 1	0A6C	DC	K0000	RETURN CNTL TO PROG
0B04 1	0A78	DC	EE	
0B05 1	0A84	DC	PENUP	
0B06 1	0A76	DC	SS	
0B07 1	0A86	DC	PENOW	
0B08 1	0A7A	DC	NN	
0B09 1	0A84	DC	PENUP	
0B0A 1	0A6C	DC	K0000	END OF ROUTINE
* RT3ST				
0B0B 1	0A84	DC	PENUP	RT 3 START
0B0C 1	0A88	DC	LEFT	
0B0D 1	0A78	DC	EE	
0B0E 1	0A74	DC	NN	

DATE 28FEB66
EC NO. 415120PROG 10 0805-0
PAGE 6

1627 FUNCTION TEST

0B0F 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507448
0B10 1	0A86	DC	PENDW	START SQUARE	80507450
0B11 1	0A74	DC	NN		80507460
0B12 1	0A78	DC	EE		80507470
0B13 1	0A76	DC	SS		80507480
0B14 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507490
0B15 1	0A7A	DC	NN		80507500
0B16 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507510
0B17 1	0A84	DC	PENUP		80507520
0B18 1	0A7C	DC	NE		80507530
0B19 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507540
0B1A 1	0A86	DC	PENDW		80507550
0B1B 1	0A7E	DC	SE		80507560
0B1C 1	0A84	DC	PENUP		80507570
0B1D 1	0A74	DC	NN		80507580
0B1E 1	0A86	DC	PENDW		80507590
0B1F 1	0A80	DC	SW		80507600
0B20 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507610
0B21 1	0A82	DC	NN		80507620
0B22 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507630
0B23 1	0A84	DC	PENUP		80507640
0B24 1	0A76	DC	SS		80507650
0B25 1	0A86	DC	PENDW		80507660
0B26 1	0A7C	DC	NE		80507670
0B27 1	0A6C	DC	K0000	END OF ROUTINE	80507680
* RT4ST					80507690
0B28 1	0A84	DC	PENUP	RT4 START	80507700
0B29 1	0A88	DC	LEFT		80507710
0B2A 1	0A7C	DC	NE		80507720
0B2B 1	0A74	DC	NN		80507730
0B2C 1	0A74	DC	NN		80507740
0B2D 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507750
0B2E 1	0A86	DC	PENDW		80507760
0B2F 1	0A80	DC	SW	SIDE 1 TRI 1	80507770
0B30 1	0A82	DC	NN		80507780
0B31 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507790
0B32 1	0A82	DC	NN	SIDE 2 TRI 1	80507800
0B33 1	0A7C	DC	NE		80507810
0B34 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507820
0B35 1	0A74	DC	NN	SIDE 3 TRI 1	80507830
0B36 1	0A7E	DC	SE		80507840
0B37 1	0A7E	DC	SE		80507850
0B38 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507860
0B39 1	0A84	DC	PENUP	MOVE TO NEW LOCATION	80507870
0B3A 1	0A7C	DC	NE		80507880
0B3B 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507890
0B3C 1	0A86	DC	PENOW		80507900
0B3D 1	0A82	DC	NN	SIDE 1 TRI 2	80507910
0B3E 1	0A7C	DC	NE		80507920
0B3F 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507930
0B40 1	0A7C	DC	NE	SIDE 2 TRI 2	80507940
0B41 1	0A7E	DC	SE		80507950
0B42 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80507960
0B43 1	0A78	DC	EE	SIDE 3 TRI 2	80507970
0B44 1	0A80	DC	SW		80507980
0B45 1	0A80	DC	SW		80507990
0B46 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80508000
0B47 1	0A84	DC	PENUP	MOVE TO NEW LOCATION	80508010
0B48 1	0A7E	DC	SE		80508020
0B49 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80508030
0B4A 1	0A86	DC	PENOW		80508040
0B4B 1	0A7C	DC	NE	SIDE 1 TRI 3	80508050
0B4C 1	0A7E	DC	SE		80508060
0B4D 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80508070
0B4E 1	0A7E	DC	SE	SIDE 2 TRI 3	80508080
0B4F 1	0A80	DC	SW		80508090
0B50 1	0A6C	DC	K0000	RETURN CNTL TO PROG	80508100
0B51 1	0A76	DC	SS	SIDE 3 TRI 3	80508110

DATE 28FEB66
EC NO. 415120PROG 10 0805-0
PAGE 6A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196362
PAGE 7

1627 FUNCTION TEST

0852 1	0A82	DC	NW		
0853 1	0A82	DC	NW		
0854 1	0A6C	DC	K0000	RETURN CNTL TO PROG	
0855 1	0A84	DC	PENUP	MOVE TO NEW LOCATION	
0856 1	0A80	OC	SW		
0857 1	0A6C	OC	K0000	RETURN CNTL TO PROG	
0858 1	0A86	DC	PENOW		
0859 1	0A7E	DC	SE	SIOE 1 TRI 4	
085A 1	0A80	DC	SW		
0858 1	0A6C	OC	K0000	RETURN CNTL TO PROG	
085C 1	0A80	OC	SW	SIOE 2 TRI 4	
0850 1	0A82	DC	NW		
085E 1	0A6C	DC	K0000	RETURN CNTL TO PROG	
085F 1	0A7A	DC	NW	SIOE 3 TRI 4	
0860 1	0A7C	OC	NE		
0861 1	0A7C	DC	NE		
0862 1	0A6C	OC	K0000	RETURN CNTL TO PROG	
0863 1	0A84	OC	PENUP	MOVE TO NEW LOCATION	
0864 1	0A82	DC	NW		
0865 1	0A6C	OC	K0000	RETURN CNTL TO PROG	
0866 1	0A86	OC	PENOW	ORAW SQUARE	
0867 1	0A7C	DC	NE		
0868 1	0A7E	OC	SE		
0869 1	0A80	OC	SW		
086A 1	0A7E	DC	NW		
086B 1	0A74	OC	PENUP		
086C 1	0A6C	OC	K0000	END OF ROUTINE	
* RT5ST					
0860 1	0A96	DC	BSWCT	RT 5 START	
086E 1	0A6C	OC	K0000	MANUAL CONTROL	
* BSS E 0					
0870	0000	ORG	P10+/03FE		
0870					
* THIS AREA CAN BE USED FOR PATCH					
* PENOW					
08F0 0	0000	DC	/0000		
* ENO					
08FE	0824		PL8GN		

DATE 28FEB66
EC NO. 415120

PROG 10 0805-0
PAGE 7

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196362
PAGE 7A

1627 FUNCTION TEST

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
BEGIN	012C	07FF,0824
BOOT	0859	085C
BSWCK	0903	084E,0863,0887,0932,0968,0982,09C9,09D6
BSWCT	0A96	086D
BUILD	083C	0843
BUSY	09F0	09F4,0A41
CHG1	0995	0960
CHG2	099C	096E
CHG3	09A4	096F
COMAO	0A99	0A94
CONST	0A6A	0A21,0A28
CONT	0A20	081F,09C5
COUNT	0A98	0A12,0A20
OISP	0A0C	0861,0885,0880,0899,08A5,0885,08CE,08EF,0908,0917,0926,0943,0966,0976,0982,098E,09A2,09C3,0A14
E0IT	0815	082A,0834,0838,09CF
EDIT1	0813	0831
E0IT2	0814	0833
EE	0A78	087A,0888,08C8,08E3,0900,0902,0AA0,0AB0,0ABC,0AC3,0AC4,0AC6,0A02,0AE2,0AF3,0804,0800,0812,0843
END	012E	07FF,09CA
EPA	0808	
ER81T	0A0A	0810,0A19,0A3C,0A3F,0A43
ER8SY	09F7	09FF
ERMSG	0A06	09F9
ERROR	0130	07FF,09F7
EKR1	09F6	09F3,09FC,0A1E,0A45
EXTRA	0A68	0883,0891,0897,0890,08A1,08A9,08E0,08F3,0924,092A,0974,097A,0980,0986,098C,0992
HALT	0133	
HOP	0A28	0A22
HOPY	0A22	0A2A
ILP	0806	
KEEP1	081A	
KEEP2	08FF	
KEEP3	0904	
KEEP4	0907	
K0000	0A6C	0A88,0AF1,0AF6,0AFA,0803,080A,080F,0814,0816,0819,0820,0822,0827,0820,0831,0834,0838,0838,083F,0842,0846,0849,0840,0850,0854,0857,0858,085E,0862,0865,086C,086E,0948,0A1A,0908,0856,083E,0818,0849,0A98,0AE0,080C,0829,07FF,0A57,0A5F,0A5A,0A59,085F,0880,0887,088F,0894,0898,08A3,08A7,08AC,08CC,08D0,08F1,08F6,090A,090F,0919,0928,0920,0941,0945,0964,0978,0970,0984,0989,0990,0997,099E,09A6,09AB,0A00,0A0F,0A30
K0002	0A60	
K0007	0A6E	
K0150	0A6F	
K0701	0853	
K8000	0A70	
LABEL	0835	
LEFT	0A88	
LOG	012F	
LOGAG	0A57	
LGG8	0A5F	
LOGM	0A66	
LOOK	0A71	
LPA	0807	
MARK	0A94	
M8USY	0A8E	
MLSCF	0809	
MNINT	0A8C	
MNRDY	0A8A	
MSG	0A68	
N8TWO	0833	
NE	0A7C	

DATE 28FEB66
EC NO. 415120

PROG 10 0805-0
PAGE 7A

1627 FUNCTION TEST

NEXT	0A00	0AA1,0AA0,0A89,0AC9,0A05,0AE1,0AEE,0AF9,0B18,0B25,0B2A,0B33,0B3A,0B3E,0B40,0B48,0B60,0B61,0B67
NN	0A74	0A32 0B59,0B70,0B82,0B8E1,0BFB,0BFD,0913,093D,094A,0A9E,0AAA,0ABA,0AC8,0A0B,0AE4,0AEF,0AF7,0AFF,0B0E,0B11,0B10,0B2B,0B2C,0B35
NDT	0A47	0A4A
NROY	0A33	0A36,0A3D
NW	0A82	0B6C,0B04,091F,0957,095C,0AA8,0A87,0ACB,0AD7,0AE7,0AF4,0B21,0B30,0B32,0B30,0B52,0B53,0B5D,0B64,0B6A
DUT	0A01	09FE
DUT1	0A61	0A5E
D2BE	0A0B	0A1D
PENO	0BFO	0B0D
PENDW	0A86	0A90,0AA2,0AA7,0AAC,0AB1,0AB6,0ABB,0ACO,0AC5,0ACA,0ACF,0AD4,0AD9,0ADE,0AE3,0AE8,0AF2,0AFE,0B02,0B07,0B10,0B1A,0B1E,0B25,0B2E,0B3C,0B4A,0B58,0B66
PENUP	0A84	0A9A,0A9F,0AA4,0AA9,0AAE,0AB3,0AB8,0ABD,0AC2,0AC7,0ACC,0AD1,0AD6,0A0B,0AE0,0AE5,0AEA,0AEC,0AFC,0B00,0B05,0B09,0B0B,0B17,0B1C,0B23,0B28,0B39,0B47,0B55,0B63,0B6B
P10	07FF	0B26,0B70
PLBGN	0B24	0BFE
PLOVA	0B16	0B39,0B3F
PLDT	0A17	0A2F
RAD	0B01	09E5
READY	0A38	0B54,0B68,0B8C,0937,0A16,0A3A,0A48
RECEV	0B17	0B22,0B27
RECSW	0B1F	09BB,09C7
REG01	0B80	0B93
REG02	0B99	0B9F
REG03	0B85	0B8B
RELOV	0132	07FF,09CD
REPT1	09FF	09FA,09FB
REQOV	0131	07FF,0B35
REKUN	09E1	09DE
R10	0B00	090A,09DC,09DF
RTAPL	09E9	09E1
RTENO	09CA	09EF
RTDVR	09CC	0B08,0B28,09D1
RTSET	090F	0B51,0B66,0B8A,0935,096A
RT0	0B29	0B06,0B07,0B47
RT1	0B54	09EA
RT1ST	0A9A	0B50
RT2	0B6B	09EB
RT2ST	0AEC	0B7E
RT3	0B8C	09EC
RT3ST	0B0B	0B8A
RT4	0937	09ED
RT4ST	0B2B	093F
RT5	09A9	09B3,09EE
RT5A	09B9	09B1,09B9
RT5ST	0B6D	09A9
RUN	0973	09A8
RUNIT	0B4E	0B44
SBSW2	0A97	09C1
SE	0A7E	0B76,0B06,0951,0960,0AA3,0AAF,0ABF,0A03,0A0F,0AFB,0B16,0B36,0B37,0B41,0B4B,0B4C,0B4E,0B59,0B6B
SENSE	0A92	0B18,0A39,0A47
SENT	0A90	0B3C,0B40,0A1B
S10E1	0976	097C
S10E2	0982	098B
S10E3	098E	0994
SQRCT	0A72	0B66,090C
SS	0A76	0B72,0BAF,0B0B,0915,0AA6,0AB2,0ABE,0A00,0A0C,0AFB,0B06,0B13,0B24,0B51
START	012D	07FF,0B4C,09B7,09E7,0A03,0A26,0A4E,0A63
STOBY	0B49	0B37

1627 FUNCTION TEST

SW	0A80	0B6E,0BDB,0954,0962,0AA5,0A05,CAC1,0ACO,DADD,DAE9,0AF5,0B1F,0B2F,0B44,0B45,0B4F,0B56,0B5A,0B5C,0B69
SWNG1	0BEB	090E
SWNG2	0BEB	0B8F,0BFA,0905
SWNG3	0BEF	0BF5
SWNG4	0926	092C
SWNG5	0923	0931
SW0	0B02	0A52
SW1	0B03	09D4
SW2	0B04	0B20,09AD,09BD
SW3	0B05	
TCNTL	096C	0950,0953,0956,0959,09A0
TERM	0B0C	0B3A,09DD
TIME	0A1F	0A1B
TDP	09A2	099B
TRICT	0A73	0BEB,0BF8,091C,092F,0971,0999
TYPE	0A50	0A2C,0A35,0A55,0A5C
WM11	094A	094D
WW	0A7A	0B7C,0B83,0B0D,0AAB,0AB4,0ACE,0ADA,0AE6,0AFD,0AFD,0B01,0B0B,0B15,0B5F
XX	0B34	0B32

TABLE OF CONTENTS

PARAGRAPH	PAGE
1. PURPOSE.	01
2. PREREQUISITES.	01
3. USE PROCEDURE.	01
3.1 LOADING PROCEDURE	
3.2 SELECTING PROGRAM OPTIONS	
3.3 PROGRAM HALTS	
3.4 PROGRAM TERMINATION	
4. PRINTOUTS.	02A
5. COMMENTS	02A
5.1 THE PRINTER TEST.	
5.2 THE KEYBOARD TEST	
5.3 ROUTINE 12 OPTION	
6. APPENDIX	04
6.1 EDIT PROCEDURE	

1. PURPOSE

THE 1053-1816 TEST IS DESIGNED TO CHECK THE OPERATING PERFORMANCE OF ALL PRINTERS ON THE SYSTEM IN OVERLAP MODE. UP TO 8 PRINTERS AND ONE KEYBOARD MAY BE RUN INDEPENDENTLY.

2. PREREQUISITES

PROGRAM PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 1,792 STORAGE WORDS.

3. OPERATING PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. CLEAR SOTRAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS, IF DESIRED
5. SELECT PROGRAM OPTIONS, IF DESIRED, FROM---

TABLE 0 FUNCTION SELECTION
TABLE 1 ROUTINE SELECT FUNCTION
TABLE 2 DEVICE SELECT FUNCTION
TABLE 3 DATA ENTRY FUNCTION
SET A TAB STOP 30 POSITIONS TO THE RIGHT OF THE LEFT MARGIN.

6. INSTRUCT MONITOR TO EXECUTE

TABLE D FUNCTION SELECTION

***** 1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM * 2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET DESIRED FUNCTION IN DATA ENTRY SWITCHES D THRU 15.
* * 4. PRESS CONSOLE INTERRUPT
* 0 0 0 0 D 1 1 D *
* *

* DATA ENTRY SWITCHES * DESCRIPTION
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* 1..... USE DELAY TO LATCH THE CYCLE CLUTCH *

TABLE 1 ROUTINE SELECT FUNCTION

***** 1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES D AND 1.
* SENSE/PROGRAM * 2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 * 3. SET DESIRED ROUTINE NUMBER IN DATA ENTRY SMS. D THRU 15.
* * 4. PRESS CONSOLE INTERRUPT.
* 0 1 0 0 2 2 0 *

* DATA ENTRY SWITCHES * DESCRIPTION
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* *
* D 0 0 0.....PRINT LAST KEYBOARD ENTRY RTN 1 *
* D 0 1 D.....TAB AND CARRIER RETURN RTN 2 *
* 0 0 1 1.....UPPER CASE CHARACTERS RTN 3 *
* 0 1 0 0.....LOWER CASE CHARACTERS RTN 4 *
* 0 1 0 1.....REGISTRATION RTN 5 *
* 0 1 1 0.....BACKSPACE AND INDEX RTN 6 *
* 0 1 1 1.....END OF LINE CARRIER RETURN RTN 7 *
* 1 0 0 D.....ROCK RTN 8 *
* 1 0 0 1.....ROLL RTN 9 *
* 1 0 1 D.....TWIST RTN 10 *
* 1 0 1 1.....PRINT SW 3 DATA RTN 11 *
* 1 1 0 0.....KEYBOARD ENTRY RTN 12 *

* NOTE. THE KEYBOARD TEST IS NORMALLY ENTERED BY DEPRESSING THE KEYBOARD
* REQUEST KEY. HOWEVER THE KEYBOARD TEST CAN NOT BE RUN ON PRINTER D
* WITHOUT RESERVING PRINTER 0 FOR EXCLUSIVE USE BY THIS PROGRAM BY
* SELECTING ROUTINE 12 (TABLE 1). SEE SECTION 5.3 .

TABLE 2 DEVICE SELECT FUNCTION

***** 1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.															
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.															
* 0 1 2 3 4 5 6 7 * 3. IT IS DESIRED TO RUN ALL PRINTERS, NO ENTRY IS															
* * NEEDED. OTHERWISE, SELECT THE DESIRED PRINTERS.															
* 4. PRESS CONSOLE INTERRUPT.															
* 1 0 0 0 0 1 1 0 *															

* DATA ENTRY SWITCHES * DESCRIPTION *															
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *															
* 1 PRINTER 8 *															
* 1 PRINTER 7 *															
* 1 PRINTER 6 *															
* 1 PRINTER 5 *															
* 1 PRINTER 4 *															
* 1 PRINTER 3 *															
* 1 PRINTER 2 *															
* 1 PRINTER 1 *															
* 1 PRINTER 0 (PRINTER THAT IS USED AS															
* THE MONITOR LOG DEVICE. THIS HAS															
* BEEN DEFINED IN THE 1053/1816 EDIT															
* CARD)															

TABLE 3 DATA ENTRY FUNCTION

***** 1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1.															
* SENSE/PROGRAM * 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.															
* 0 1 2 3 4 5 6 7 * 3. SET DESIRED PRINT DATA IN DATA ENTRY SWITCHES 0-15.															
* * 4. PRESS CONSOLE INTERRUPT.															
* 1 1 0 0 0 1 1 0 * NOTE -- EACH ENTRY CONTAINS TWO CHARACTERS FOR OUTPUT.															
* * ROUTINE 11 MUST BE SPECIFIED (TABLE 1) FOR															
* * THIS DATA TO BE PRINTED.															

* DATA ENTRY SWITCHES * DESCRIPTION *															
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *															
* X X X X X X X X 1ST OUTPUT CHARACTER OR CONTROL WORD *															
* X X X X X X X X 2ND OUTPUT CHARACTER OR CONTROL WORD *															

3.3 PROGRAM HALTS

THIS PROGRAM HAS NO HALTS.

3.4 PROGRAM TERMINATION

A. STANDARD MONITOR TERMINATION

B. PROGRAM CONTROL FUNCTION

THE PROGRAM WILL TERMINATE IF NO EDIT INFORMATION HAS BEEN PROVIDED OR IF THE OPERATOR HAS CLEARED DEVICE SELECTION WHILE PROGRAM IS EXECUTING.

4. PRINTOUTS

4.1 STATUS MESSAGE

NONE

4.2 ERROR MESSAGES

PTR
PID MID RID RAD NO. WAS S/B
0600 E001 000X XXXX 000X XXXX 0D00
DSW ERRDR ON CHECKING FOR READY

THIS MESSAGE MAY COME OUT IN ERRDR WHEN DESELECTING A NOT READY TYPEWRITER WHEN RUNNING MULTIPLE TYPEWRITERS.

0600 E002 000X XXXX 000X XXXX XXXX
DSW ERRDR IMMEDIATELY AFTER OUTPUT COMMAND.

0600 E003 000X XXXX 000X XXXX XXXX
INTERRUPT DSW ERRDR

0600 E004 000X XXXX 000X XXXX XXXX
LDST PRINTER INTERRUPT.
DSW AFTER LAST X10 WRITE COMMAND IS PRINTED.

0600 E005 000C XXXX 000X XXXX
KEYCODE ENTRY ERROR. AN ILLEGAL KEYBOARD CODE HAS BEEN DETECTED.

0600 E006 000C XXXX 000X XXXX 0Z00
DSW ERRDR ON PLACING KEYBOARD IN PROCEED STATUS

0600 E007 000C XXXX 000X XXXX 0000
DSW ERRDR AFTER READ KEYBOARD COMMAND

0600 E008 000C XXXX 000X XXXX 0100
DSW ERRDR ON READING INTO A STORAGE PROTECTED AREA.

1ST 2ND
0600 E009 000C XXXX 000X XXXX XXXX
MULTIPLE KEYBOARD READ ERROR.
THE CHARACTERS READ DO NOT COMPARE.

5. COMMENTS

THIS FUNCTION TEST IS DESIGNED TO CHECK THE PROPER OPERATION OF THE 1053-1816 STATUS INDICATORS. THE VARIOUS ROUTINES AIO IN DETERMINING THE PROPER ADJUSTMENT OF THE PRINTER.

5.1 THE PRINTER TEST.

THE PRINTER TEST IS A SERIES OF STANDARD TESTS PERFORMED IN ORDER OF COMPLEXITY. EACH TEST HAS TWO LINES OF OUTPUT (THE FIRST IN BLACK AND THE SECOND IN RED). THE ONLY EXCEPTION IS THE REGISTRATION TEST WHICH HAS ONLY ONE LINE.

A. THE NORMALLY RUN ROUTINES ARE DONE SEQUENTIALLY AS FOLLOWS

1. PRINT LAST KEYBOARD ENTRY.
2. CARRIER RETURN AND TABULATE.
3. UPPER CASE CHARACTERS.
4. LOWER CASE CHARACTERS. (SHIFT SIDE OF ELEMENT).
5. REGISTRATION

THIS TEST PRINTS A BLACK '+' ENCLOSED BY A RED 'O'. IT CHECKS THE BACKSPACE FUNCTION AND THE ALIGNMENT OF THE PRINT.

6. BACKSPACE, INDEX.

CHECKS TABULATE, BACKSPACE, AND LINE FEED FUNCTIONS.

7. END OF LINE CARRIER RETURN

CHECKS TO SEE THAT THE END OF LINE CARRIER RETURN WORKS PROPERLY.

8. ROCK

TESTS THE TILT MECHANISM BY TYPING CHARACTERS LOCATED ONE AFTER ANOTHER IN VERTICAL COLUMNS ON THE PRINT HEAD.

9. ROLL

TESTS THE ROTATE MECHANISM BY SELECTING CHARACTERS ONE AFTER ANOTHER IN HORIZONTAL BANDS AROUND THE PRINT HEAD.

10. TWIST

TESTS THE COMBINED ROTATE AND TILT MECHANISM BY CAUSING A MAXIMUM ROTATION AND TILT BETWEEN CHARACTERS.

B. ROUTINES AVAILABLE FOR EXECUTION ON AN OPTIONAL BASIS FOLLOW,

ROUTINE 11 -- PRINT SW 3 DATA (TABLE 3)

TWO CHARACTERS MAY BE ENTERED VIA THE BIT SWITCHES ON FUNCTION LEVEL 11 (TABLE 3). THE DATA IS PRINTED ALTERNATELY TO ENTER THIS MODE, ROUTINE 11 MUST BE SPECIFIED (TABLE 1).

5.2 THE KEYBOARD TEST

THE KEYBOARD TEST IS ENTERED BY DEPRESSING THE KEYBOARD REQUEST KEY ANY TIME WHILE THE PRINTER TEST IS RUNNING THAT PRINTER.

NOTE

ONLY IF PRINTER 0 IS AN 1816 AND ITS KEYBOARD IS TO BE TESTED, THEN ROUTINE 12 MUST BE SPECIFIED BEFORE DEPRESSING KEYBOARD REQUEST. DEPRESSING EOF WHILE IN PROCEED STATUS WILL CAUSE THE PRINTER TO RETURN TO ROUTINE 1 AND PRINT THE KEYBOARD ENTRY. TO REENTER THE KEYBOARD TEST, THE OPTION MUST AGAIN BE SET. (SEE SECTION 5.3).

AT THIS TIME THE OPERATOR MAY ENTER ANY NUMBER OF CHARACTERS. EACH CHARACTER ENTERED IS PRINTED AS IT IS KEYED IN. WHEN THE EOF KEY IS DEPRESSED, THE FIRST 48 CHARACTERS ENTERED WILL BE REPRINTED WHEN THE PROGRAM RESTARTS THE PRINTER TEST. THOSE CHARACTERS LAST KEYED ARE NOW INCLUDED AS ROUTINE 1 OF THE STANDARD PRINTER TESTS.

ALL KEYBOARD KEYS RETAIN THEIR NORMAL USE EXCEPT,

KEY	FUNCTION
EOF	END TRANSMISSION OF DATA, END KEYBOARD ROUTINE
ERASE FIELD	THE NEXT CHARACTER (IF ALPHA) WILL BE IN LOWER CASE.
0-2-8	LINE FEED

5.3 ROUTINE 12 OPTION

THIS OPTION RESERVES EXCLUSIVE USE OF PRINTER 0 TO THIS PROGRAM. THIS OPTION MUST BE SPECIFIED IF AND ONLY IF THE KEYBOARD ON PRINTER 0 IS TO BE TESTED.

(PRINTER 0 IS THAT PRINTER WHICH HAS BEEN EDITED AS THE FIRST EDIT POSITION).

IF THE MONITOR IS USING PRINTER 0 TO OUTPUT MESSAGES, THIS OPTION WILL CAUSE,

1. THE SUPPRESSION OF ALL 1816 PRINTER 0 PRINTOUTS NOT ORIGINATED BY THIS PROGRAM.
2. A LACK OF MONITOR RESPONSE TO CONSOLE INTERRUPT UNTIL THE MONITOR CAN AGAIN PRINT ON PRINTER 0.
3. THE TEMPORARY DELAY OF CONTINUATION OF OVERLAP, UNTIL COMPLETION OF THE KEYBOARD ROUTINE.

THE KEYBOARD ROUTINE IS ENDED BY DEPRESSING THE EOF KEY WHILE IN PROCEED STATUS. THIS ACTION ALSO RESETS THE ROUTINE 12 OPTION.

----- LAST PAGE -----

6 APPENDIX

PAGE 4

1053/1816

6.1 EDIT PROCEDURE
THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

ODEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE I/O BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).

ODEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-7).
2. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES:

1. AN "E" IN COLUMN 1.
2. THE PID FOR THIS PROGRAM (COL. 2-3)
3. A TERMINATOR WORD OF "FFF" (COL. 7-10).

CARD 0 - HAS ONE DDEF ENTRY FOR EACH OF THE TYPEWRITERS ON THE SYSTEM (PRTR. 1 - PRTR. 8), ONE ENTRY TO DEFINE WHICH OF THESE ARE 1816'S (IDENTIFY 1816'S), AND ONE DDEF ENTRY TO IDENTIFY WHICH OF THE TYPEWRITERS HAS BEEN ASSIGNED AS THE DIAGNOSTIC MONITOR'S OUTPUT DEVICE. WHEN A TYPEWRITER IS ASSIGNED AS THE DIAGNOSTIC MONITOR'S OUTPUT DEVICE, THE DDEF IS PUNCHED IN THE MONITOR OUTPUT DEVICE ENTRY, AND THE TYPEWRITER'S NORMAL DDEF ENTRY WILL BE PUNCHED 0000. IF THE C.E. WISHES TO USE THE 1443 AS THE DIAGNOSTIC MONITOR'S OUTPUT DEVICE, THERE IS NO NEED TO ALTER THE 1053/1816 EDIT CARD. (REFER TO EDIT CARD ZERO OF THE DIAGNOSTIC MONITOR.)

TO ALTER THE 1053/1818 EDIT CARD. (REFER TO EDIT CARD)
CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.

CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.
IMPORTANT: NO TWO DDEF'S CAN BE ALIKE AND ANY UNUSED DDEF'S MUST BE PUNCHED WITH ZEROS.

IMPORTANT: NO TWO DDEF'S CAN BE ALIKE AND ANY UNUSED DDEF'S MUST BE PURCHASED AND SHIPPED IN THE FOLLOWING MANNER:

- *THE 1816 IDENTIFICATION FIELD SHOULD BE PUNCHED IN THE FOLLOWING MANNER:
1. IN FIGURE AT RIGHT, PLACE A 1 IN THE POSITIONS CORRESPONDING TO 1816 DDEF'S.
 2. PLACE ZEROS FOR EACH ONE WHICH IS NOT AN 1816.
 3. CONVERT THE RESULTANT NUMBER TO HEX AND ENTER THAT NUMBER IN COLS. 62 AND 63.

MON.	OUTPUT
—	PRINTER 1
0	
0	
0	
—	PRINTER 5
0	
0	

COLUMN	PROGRAM ID		CARD SEQUENCE NUMBER		NUMBER OF EDIT ENTRIES		MONITOR OUTPUT DEV DDEF		PTR. 1 DDEF		PTR. 2 DDEF		PTR. 3 DDEF		PTR. 4 ODEF		PTR. 5 DDEF		PTR. 6 DDEF		PTR. 7 DDEF		PTR. 8 DDEF		IDENTIFY 1816's *							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	26	31	36	41	46	51	56	61	66	71	
CARD 0	E	0	6	0	0	E	D	0	0	0	0	0	0	A																0	0	
END	E	0	6	0	0	F	F	F	F																							

EC NO.415120 415120A 411875

PROG ID 0806-*

PAGE 4

PART NO. 2196368
PAGE 8

PAGE 5

00600

CARRIER RETURN

```

#$.:1RZ96WDFDMU42SKB0A-08YQHGX75VNECLT31/JA $!:=~ZRFDFW;~UMDBKS:|?>~HQY=:XPGENV)<TLEAJ-}
#9642087531/TVXY-SUNZ;$ROMK&QPNLJACEGH&BDFI: ACEGHZ&BDFI$!ROMK&QPNLJ-TVXY?SUNZ:=~=:|:~<{$
#A:J$-:(|RTZL9C6EWNHVOF)D~MXUP4GZHSQKYB@|&?->08BYKQSH+G~PUXM7D5FVDNW:E~LZTR3|!$|JJA=

```

DATE 28FEB66 01MAY66 01OCT67
EC NO. 415120 415120A 411875

PROG ID 0806-~~4~~
PAGE 3

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

1053/1816 FUNCTION TEST

PART NO. 2196366
PAGE 1

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

1053/1816 FUNCTION TEST

PART NO. 2196366
PAGE 1A

```
*
*
*      1800 DIAGNOSTIC MONITOR
*
*      TRANSFER VECTOR
*
012C 0  BEGIN EQU      300
012D 0  START EQU     BEGIN&1
012E 0  END EQU       START&1
012F 0  LOG EQU       END&1
0130 0  ERROR EQU     LOG&1
0131 0  REQDV EQU     ERROR&1
0132 0  RELOV EQU     REQDV&1
0133 0  HALT EQU      RELOV&1
*
*
*      TABLE OF INDEXES FOR REFERENCE
*      TO PRINTER STATUS TABLES
*
*      INDEX REG 3 ALWAYS HAS THE ADDR
*      OF THE PRINTER TABLE
*
0000 0  ADR EQU       0
0001 0  RTN EQU       1
0002 0  STS EQU       2
0003 0  OUT EQU       3
0004 0  ITR EQU       4
0005 0  SLT EQU       5
0006 0  NOS EQU       6
0007 0  PAO EQU       7
0008 0  WRT EQU       8
000A 0  PTR EQU      10
000C 0  KEY EQU      12
000E 0  SEE EQU      14
0010 0  ERR EQU      16
*
*
07FF      ORG      *$2047
*****
*      DIAGNOSTIC MONITOR
*      CONTROLLED
*      1800 STEREO 1816-1053
*      PTR FUNCTION TEST
*****
07FF 0 0600  PID DC      /0600  PRDGRAM ID NO
0800 0 0001  RID DC      1      ONE TEST NUMBER
0801 1 09E3  RAD DC      PRCON   TEST STARTING ADDR
0802 0 0000  SWO DC      /0000   ECN 00 CONTROL
0803 0 0000  SW1 DC      /0000   ECN 01 RTN SELECT
0804 0 0000  SW2 DC      /0000   PTR SELECT FUNCTION
0805 0 0000  SW3 DC      /0000   DATA FOR PRINTERS
0806 1 08FE  GO DC       GO      INITIALIZE ADDR
0807 1 091E  DC        AGAIN    LODP PROGRAM ADDR
0808 1 0CBC  EPA DC      TEND    END PRDGRAM ADDR
0809 0 0000  MLSCE DC    0       PRDGRAM CONTROL FLD
080A 0 FFFF  TERM DC     /FFFE   TERMINATOR
080B 1 0EFD  DC        PEND     LAST PROGRAM ADDR
080C 0 0000  DC        0
080D 0 0000  DC        0
080E 0 0000  DC        0
080F 0 0000  DNLIN DC    /0000   ZERD EQUAL OEE-LINE
0810 0 0002  DC        /0002   COMPATIBILITY SWITCH
*
*      DEVICE DEFINITION EDIT
0811 0 0000  DDEF0 DC     /0000   MONITDR LOGGING DEV
0812 0 0000  DDEF1 DC     /0000   PRINTER NO 1
0813 0 0000  DDEF2 DC     /0000   PRINTER NO 2
0814 0 0000  DDEF3 DC     /0000   PRINTER NO 3
```

80600020
80600030
80600040
80600050
80600060
80600070
80600080
80600090
80600100
80600110
80600120
80600130
80600140
80600150
80600160
80600170
80600180
80600190
80600200
80600210
80600220
80600230
80600240
80600250
80600260
80600270
80600280
80600290
80600300
80600310
80600320
80600330
80600340
80600350
80600360
80600370
80600380
80600390
80600400
80600410
80600420
80600430
80600440
80600450
80600460
80600470
80600480
80600490
80600500
80600510
80600520
80600530
80600540
80600550
80600560
80600570
80600580
80600590
80600600
80600610
80600620
80600630
80600640
80600650
80600660
80600670
80600680
80600690

```
0815 0 0000  DDEF4 DC      /0000   PRINTER NO 4
0816 0 0000  DDEF5 DC      /0000   PRINTER NO 5
0817 0 0000  DDEF6 DC      /0000   PRINTER NO 6
0818 0 0000  DDEF7 DC      /0000   PRINTER NO 7
0819 0 0000  DDEF8 DC      /0000   PRINTER NO 8
*
081A 0 C400  P16EF DC      /C400   1816 IDENT WORD
081B 0 0000  DDEEX DC      *-*     DDEEO SAVE AREA
*****
*
*      PRINTER INTERRUPT ROUTINE
*
081C 0 0000  INTSW DC      /0000   INTERRUPT EXPECTED
081D 0 0000  DVA0 DC      /0000   PTR 0 AREA CODE
*
081E 0 0000  PTR0I DC      /0000   PTR 0 INTERRUPT RTN IE
081F 0 1010  SLA          16      CLEAR ACC
0820 0 D0EB  STD          INTSW   CLEAR INTERRUPT SW
0821 0 C0E8  LD           P16EE   SET PRINTER ID
0822 0 18D0  RTE          16
0823 1 6700 0EA8 LDX L3 PTR0
0825 0 404A  BSI          COMIN
0826 1 4C80 081E BSC I PTR0I
*
*
0828 0 0000  DVA1 DC      /0000   PTR 1 AREA CODE
*
0829 0 0000  PTR1I DC      /0000   PTR 1 INTERRUPT RTN IE
082A 0 C0EE  LD           P16EF   SET PRINTER ID
082B 0 18CE  RTE          15
082C 1 6700 0EBA LDX L3 PTR1
082E 0 4041  BSI          COMIN
082F 1 4C80 0829 BSC I PTR1I
*
*
0831 0 0000  DVA2 DC      /0000   PTR 2 AREA CODE
*
0832 0 0000  PTR2I DC      /0000   PTR 2 INTERRUPT RTN IE
0833 0 C0E6  LD           P16EF   SET PRINTER ID
0834 0 18CE  RTE          14
0835 1 6700 0ECC LDX L3 PTR2
0837 0 4038  BSI          COMIN
0838 1 4C80 0832 BSC I PTR2I
*
*
083A 0 0000  DVA3 DC      /0000   PTR 3 AREA CODE
*
083B 0 0000  PTR3I DC      /0000   PTR 3 INTERRUPT RTN IE
083C 0 C0DD  LD           P16EE   SET PRINTER ID
083D 0 18CD  RTE          13
083E 1 6700 0EDE LDX L3 PTR3
0840 0 402E  BSI          COMIN
0841 1 4C80 083B BSC I PTR3I
*
*
0843 0 0000  DVA4 DC      /0000   PTR 4 AREA CODE
*
0844 0 0000  PTR4I DC      /0000   PTR 4 INTERRUPT RTN IE
0845 0 C0D4  LD           P16EF   SET PRINTER ID
0846 0 18CC  RTE          12
0847 1 6700 0EE0 LDX L3 PTR4
0849 0 4026  BSI          COMIN
084A 1 4C80 0844 BSC I PTR4I
*
*
084C 0 0000  DVA5 DC      /0000   PTR 5 AREA CODE
*
084D 0 0000  PTR5I DC      /0000   PTR 5 INTERRUPT RTN IE
```

80600700
80600710
80600720
80600730
80600740
80600750
80600760
80600770
80600780
80600790
80600800
80600810
80600820
80600830
80600840
80600850
80600860
80600870
80600880
80600890
80600900
80600910
80600920
80600930
80600940
80600950
80600960
80600970
80600980
80600990
80601000
80601010
80601020
80601030
80601040
80601050
80601060
80601070
80601080
80601090
80601100
80601110
80601120
80601130
80601140
80601150
80601160
80601170
80601180
80601190
80601200
80601210
80601220
80601230
80601240
80601250
80601260
80601270
80601280
80601290
80601300
80601310
80601320
80601330
80601340
80601350
80601360
80601370

1053/1816 FUNCTION TEST

```
084E 0 C0CB      LO      P16EF      SET PRINTER ID      80601380
084F 0 18CB      RTE      11          80601390
0850 1 6700 0F02 LDX L3 PTR5      80601400
0852 0 4010      BSI      COMIN      80601410
0853 1 4C80 0840 BSC I PTR5I      IX 80601420
*               *               *               *
* DVA6 DC /0000 PTR 6 AREA CODE 80601430
*               *               *               *
0855 0 0000      DVA6 DC /0000 PTR 6 AREA CODE 80601440
*               *               *               *
0856 0 0000      PTR6I DC /0000 PTR 6 INTERRUPT RTN IE 80601450
0857 0 C0C2      LD      P16EF      SET PRINTER ID 80601460
0858 0 18CA      RTE      10          80601470
0859 1 6700 0F14 LDX L3 PTR6      80601480
085B 0 4014      BSI      COMIN      80601490
085C 1 4C80 0856 BSC I PTR6I      IX 80601500
*               *               *               *
* DVA7 DC /0000 PTR 7 AREA CODE 80601510
*               *               *               *
085E 0 0000      PTR7I DC /0000 PTR 7 INTERRUPT RTN IE 80601520
085F 0 C0B9      LD      P16EF      SET PRINTER ID 80601530
0861 0 18C9      RTE      9          80601540
0862 1 6700 0F26 LDX L3 PTR7      80601550
0864 0 400B      BSI      COMIN      80601560
0865 1 4C80 085F BSC I PTR7I      IX 80601570
*               *               *               *
* DVA8 DC /0000 PTR 8 AREA CODE 80601580
*               *               *               *
0867 0 0000      PTR8I DC /0000 PTR 8 INTERRUPT RTN IE 80601590
0868 0 C0B0      LD      P16EF      SET PRINTER ID 80601600
0869 0 C0B0      RTE      8          80601610
086A 0 18C8      LDX L3 PTR8      80601620
086B 1 6700 0F38 BSI COMIN      IX 80601630
086D 0 4002      BSC I PTR8I      80601640
086E 1 4C80 0868 *               *               *
* COMIN DC /0000 PTR 8 INTERRUPT RTN IE 80601650
*               *               *               *
086F 0 0000      PTR8I DC /0000 PTR 8 INTERRUPT RTN IE 80601660
0870 0 C302      LD      3 STS      SET PRINTER ID 80601670
0871 0 C302      LD      3 STS      SET PRINTER ID 80601680
0872 1 B400 0960 CMP L K8000      80601690
0874 0 0B0A      XIO 3 PTR      80601700
0875 0 7003      MOX      TIPE      80601710
0876 0 0B0A      XIO 3 PTR      80601720
0877 1 4C80 0870 COMIX BSC I COMIN      IX 80601730
*****
0879 0 18D0      TYPE RTE 16          80601740
087A 1 4C28 08B4 BSC L COM11,&Z BR IF 1816 80601750
087C 0 C079      LD      11          CHECK PTR INT 80601760
087D 0 D302      COMIL STO 3 STS      80601770
087E 1 C400 0960 LD L K8000      80601780
0880 0 18D0      RTE      16          80601790
0881 1 B400 0960 CMP L K8000      80601800
0883 0 1000      NOP          80601810
0884 0 7001      MDX      KEYER      80601820
0885 0 70F1      MDX      COMIX      80601830
*               *               *               *
0886 0 4005      KEYER BSI DETE      CK IF 1053 FOR 1816 80601840
0887 0 70EF      MDX      COMIX      DSW OK 80601850
0888 0 0B10      STD 3 ERR      SAVE DSW ERROR 80601860
0889 1 6F00 09E2 STX L3 ERIND      SET ERROR INDICATOR 80601870
088B 0 70EB      MDX      COMIX      80601880
*               *               *               *
* CK IF 1053 FOR 1816 80601890
*               *               *               *
088C 0 0000      DETE DC *-*      ENTRY 80601900
088D 0 6B10      STX 3 DETX&1      SAVE XR 3 80601910
088E 0 D01C      STO      DETS      SAVE ACC 80601920
088F 0 1001      SLA      1          80601930
0890 0 F01B      FOR      K0400      KEYBD NOT READY 80601940
```

1053/1816 FUNCTION TEST

```
0891 1 4C20 089B BSC L DFTR,Z BCH IF KYBD READY 80602060
*               *               *               *
0893 0 6306      LDX 3 6          80602070
0894 0 C009      DETG LD DETX&1      80602080
0895 1 F700 08A7 FOR L3 DETBL-1      80602090
0897 1 4C18 08A7 BSC L DETC1,&-      80602100
0899 0 73FF      MDX 3 -1          COMPARE PTR ADRS 80602110
089A 0 70F9      MDX      DETG      BCH IF PTR FOUND 80602120
*               *               *               *
089B 1 7401 088C DETR MDX L DETE,1      80602130
089D 0 6700 0000 DETX LDX L3 *-*      80602140
089F 0 C00B      LD      DETS      ADJ RETURN ADRS, ERR 80602150
08A0 1 4C80 088C BSC I DETE      RESTORE XR 3 80602160
*               *               *               *
08A2 1 C400 081A DETC1 LD L P16EF      RESTORE ACC 80602170
08A4 0 1300      SLA 3 0          RETURN VIA ENTRY 80602180
08A5 0 4802      BSC C          80602190
08A6 0 70F4      MDX DETR      80602200
08A7 0 70F5      MDX DETX      IS 1053 FOR 1816 80602210
*               *               *               *
08A8 1 0EA8      DETBL DC PTR0      80602220
08A9 1 0EBA      DC PTR1          * NO 80602230
08AA 0 0000      DC *-*          * YES 80602240
08AB 0 0000      DETS DC *-*      MON LOG PTR 80602250
08AC 0 0400      K0400 DC /0400      PTR1 ADRS 80602260
08AD 1 0F02      DC PTR5          NOT USED 80602270
*               *               *               *
08AE 0 D04A      KBDOL STO TENPX      ACC STORAGE 80602280
08AF 0 1010      SLA 16          CONSTANT 80602290
08B0 1 D400 0803 STO L SW1      PTR5 ADRS 80602300
08B2 0 C046      LD      TFMPX      SAVE ACC 80602310
08B3 0 7003      MDX COMI2      CLEAR ACC 80602320
*               *               *               *
08B4 0 18CE      COMI1 RTE 14          REMOVE RTN 12 SELECTION 80602330
08B5 1 4C28 08BF BSC L KBDRL,&Z BR IF KBD REQUEST 80602340
08B7 0 18D2      COMI2 RTE 18          RESTORE ACC 80602350
08B8 0 C302      LD 3 STS          80602360
08B9 1 B400 0C89 CMP L KE000      80602370
08BB 0 702C      MDX COMI4      80602380
08BC 0 70BA      MDX COMIX      80602390
*               *               *               *
08BD 0 C037      LD      KA000      80602400
08BE 0 70BE      MDX COMIL      BR IF KBD REQUEST 80602410
*               *               *               *
08BF 1 7400 080F KBDRL MDX L ONLIN,0      80602420
08C1 0 70EC      MDX      KBDOL      IS IT ON-LINE 80602430
08C2 1 C400 0803 LD L SW1      * YES 80602440
08C4 1 F400 0806 AND L BASIC      * NO, GET RTN NUMBER 80602450
08C6 1 F400 0A2F FOR L TWLVE      REMOVE BAD BITS 80602460
08C8 1 4C18 08CD BSC L KBDRL,&-      80602470
08CA 0 C30A      LD 3 PTR      BR IF ROUTINE 12 80602480
08CB 1 4C18 0877 BSC L COMIX,&-      FETCH PTR NUMBER 80602490
08CD 0 C027      KBDRL LD KA000      BR IF PRINTER ZERO 80602500
08CE 0 D302      STO 3 STS      SELECT KEYBOARD NEXT 80602510
08CF 0 0B0E      XIO 3 SEE      DESELECT KEYBOARD 80602520
*               *               *               *
08D0 1 C400 0A2F LD L TWLVE      80602530
08D2 0 D301      STO 3 RTN      SET RTN NUMBER 80602540
*               *               *               *
08D3 0 63E7      LDX 3 -25      INITIALIZE KEYBOARD 80602550
08D4 1 6F00 0BA3 STX L3 WRDCT&1      * ROUTINE 80602560
08D6 0 6300      LDX 3 0          80602570
08D7 1 6F00 0BC6 STX L3 SLTWD      80602580
08D9 0 6301      LDX 3 1          80602590
08DA 1 6F00 0C98 STX L3 ANY&2      80602600
08DC 1 6F00 0AA4 STX L3 RSADR&1      80602610
*               *               *               *
08DE 1 C400 0803 LD L SW1      80602620
```


IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 3

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 3A

1053/1816 FUNCTION TEST

1053/1816 FUNCTION TEST

```
08E0 1 E400 0806      ANO  L  BASIC      REMOVE BAO BITS      80602740
08E2 0 1801           SRA          1          80602750
08E3 1 4C20 0877      BSC  L  COMIX,Z    BR IF SW1 NOT 1 OR 0  80602760
08E5 1 0400 0803      STO  L  SW1          80602770
                                *          80602780
08E7 0 708F           MDX          CDMIX      EXIT          80602790
                                *          80602800
08E8 1 F400 08CB      COMI4 EOR  L  KF000      80602810
08EA 0 4820           BSC          Z          SKIP IF REAO KEYBOAR 80602820
08EB 0 7090           MOX          COMIL-1    GO CHECK PTR INT  80602830
08EC 0 C074           LO          KC000      80602840
08ED 0 D302           STO          3 STS      80602850
08EE 0 C005           LD          K4000      80602860
08EF 0 1800           RTE          16        80602870
08F0 0 B003           CMP          K4000      BR IF KBO ERRDR  80602880
08F1 0 1000           NOP          80602890
08F2 0 7093           MDX          KEYER      80602900
08F3 0 7083           MOX          COMIX      80602910
                                *          80602920
                                *          80602930
                                *          80602940
                                *          80602950
                                *          80602960
08F4 0 4000           K4000 OC      /4000      CONSTANTS      80602970
08F5 0 A000           KA000 OC      /A000      80602980
08F6 0 0002           II          DC          2          80602990
08F7 0 0000           FSTSW OC      *-*        ZERO AFTER FIRST PASS 80603000
08F8 0 0000           SWSTG OC      *-*        SW2 STDRAGE      80603010
                                ***** 80603020
08F9 0 0000           TEMPX OC      *-*        TEMPORARY STORAGE 80603030
                                ***** 80603040
08FA 0 68FC           TYCUS STX      FSTSW      SET FIRST SWITCH 80603050
08FB 0 4480 012C      BSI          I BEGIN    CALL ON MDNITOR  80603060
08FO 1 07FF           OC          PID          *          80603070
                                ***** 80603080
                                *          80603090
                                *          80603100
                                *          80603110
                                *          80603120
                                *          80603130
                                *          80603140
                                *          80603150
                                *          80603160
                                *          80603170
                                *          80603180
                                *          80603190
                                *          80603200
                                *          80603210
                                *          80603220
                                *          80603230
                                *          80603240
                                *          80603250
                                *          80603260
                                *          80603270
                                *          80603280
                                *          80603290
                                *          80603300
                                *          80603310
                                *          80603320
                                *          80603330
                                *          80603340
                                *          80603350
                                *          80603360
                                *          80603370
                                *          80603380
                                *          80603390
                                *          80603400
                                *          80603410
091F 0 0000           AGAIN DC      /0000
0920 1 C400 0804      LD          L SW2      GET FUNC 2
0922 1 7400 080F      MDX          L ONLIN,0  TEST ON LINE
0924 0 7001           MDX          AGAN1      * YES
```

```
0925 0 7018           MOX          AGAN8      * ND          80603420
                                *          80603430
                                *          80603440
                                *          80603450
0926 0 6100           AGAN1 LDX      L 0          80603460
0927 1 6D00 0849      STX          L1 OSWCS+1  CHANGE VALUE      80603470
0929 1 4C20 0932      RSC          L AGAN5,Z    BCH IF PRINTER SELECTED 80603480
092B 0 61F7           LDX          1 -9        80603490
092C 1 C500 081A      AGAN2 LD          L1 DDEF0&9  GET DDEF ENTRY      80603500
092E 1 4C20 093A      BSC          L AGAN4,Z    IS IT ZERD      80603510
0930 0 7101           MDX          1 1        * YES          80603520
0931 0 70FA           MOX          AGAN2      80603530
                                *          80603540
                                *          80603550
                                *          80603560
                                *          80603570
0932 0 6100           AGAN5 LDX      L 0          80603580
0933 0 4828           BSC          &Z          IS PRINTER FOUND  80603590
0934 0 7003           MOX          AGAN6      * YES          80603600
0935 0 1001           SLA          1          * NO          80603610
0936 0 7101           MOX          1 1        80603620
0937 0 70FB           MDX          AGAN5&1    80603630
                                *          80603640
                                *          80603650
                                *          80603660
                                *          80603670
                                *          80603680
                                *          80603690
093E 1 C400 0804      AGAN8 LD          L SW2          80603700
0940 1 4C20 0944      BSC          L XX,Z      BCH IF PTR SELECTED 80603710
0942 1 C400 09B6      LD          L KFF&0    * NO, SELECT ALL PTR 80603720
0944 1 0400 0804      XX          STO      L SW2      SET PTR SELECTED 80603730
0946 1 0400 09B7      STD          L SWCMP      *****
                                *          80603740
                                *          80603750
                                *          80603760
                                *          80603770
                                *          80603780
                                *          80603790
                                *          80603800
                                *          80603810
                                *          80603820
                                *          80603830
                                *          80603840
                                *          80603850
                                *          80603860
                                *          80603870
                                *          80603880
                                *          80603890
                                *          80603900
                                *          80603910
                                *          80603920
                                *          80603930
                                *          80603940
                                *          80603950
                                *          80603960
                                *          80603970
                                *          80603980
                                *          80603990
                                *          80604000
                                *          80604010
                                *          80604020
                                *          80604030
                                *          80604040
                                *          80604050
                                *          80604060
                                *          80604070
                                *          80604080
                                *          80604090
0948 1 6500 09BA      LD          L1 SELT      SET MAIN LINE
094A 1 6D00 0809      STX          L1 MLSCF    * SEQUENTIAL CONTROL
094C 1 4C80 091F      BSC          I AGAIN      *****
                                *          80603740
                                *          80603750
                                *          80603760
                                *          80603770
                                *          80603780
                                *          80603790
                                *          80603800
                                *          80603810
                                *          80603820
                                *          80603830
                                *          80603840
                                *          80603850
                                *          80603860
                                *          80603870
                                *          80603880
                                *          80603890
                                *          80603900
                                *          80603910
                                *          80603920
                                *          80603930
                                *          80603940
                                *          80603950
                                *          80603960
                                *          80603970
                                *          80603980
                                *          80603990
                                *          80604000
                                *          80604010
                                *          80604020
                                *          80604030
                                *          80604040
                                *          80604050
                                *          80604060
                                *          80604070
                                *          80604080
                                *          80604090
094E 1 0811           DDEF5 DC      DDEF0
094F 1 0812           DC          DDEF1
0950 1 0813           OC          DDEF2
0951 1 0814           OC          DDEF3
0952 1 0815           OC          DDEF4
0953 1 0816           DC          DDEF5
0954 1 0817           DC          DDEF6
0955 1 0818           DC          DDEF7
0956 1 0819           DC          DDEF8
                                *          80603850
                                *          80603860
                                *          80603870
                                *          80603880
                                *          80603890
                                *          80603900
                                *          80603910
                                *          80603920
                                *          80603930
                                *          80603940
                                *          80603950
                                *          80603960
                                *          80603970
                                *          80603980
                                *          80603990
                                *          80604000
                                *          80604010
                                *          80604020
                                *          80604030
                                *          80604040
                                *          80604050
                                *          80604060
                                *          80604070
                                *          80604080
                                *          80604090
0957 1 0810           DVAS DC          OVA0      ADDR DF AREA CODE 80603860
0958 1 0828           DC          DVA1      80603870
0959 1 0831           OC          OVA2      80603880
095A 1 083A           DC          DVA3      80603890
095B 1 0843           DC          DVA4      80603900
095C 1 084C           DC          DVA5      80603910
095D 1 0855           DC          OVA6      80603920
095E 1 085E           OC          DVA7      80603930
095F 1 0867           OC          DVA8      80603940
                                *          80603950
                                *          80603960
                                *          80603970
                                *          80603980
                                *          80603990
                                *          80604000
                                *          80604010
                                *          80604020
                                *          80604030
                                *          80604040
                                *          80604050
                                *          80604060
                                *          80604070
                                *          80604080
                                *          80604090
0960 0 8000           K8000 OC      /8000      PTR SVC INT DSW S/B 80603970
0961 0 C000           KC000 DC      /C000      80603980
                                ***** 80603990
                                *          80604000
                                *          80604010
                                *          80604020
                                *          80604030
                                *          80604040
                                *          80604050
                                *          80604060
                                *          80604070
                                *          80604080
                                *          80604090
0962 1 6700 0C00      RQST LOX      L3 TEND3
0964 1 6600 0984      LDX          L2 RQST8
0966 0 61F7           LOX          1 -9        80604050
0967 1 C500 081A      RQST1 LD          L1 DDEF0&9  80604060
0969 1 4C20 0976      BSC          L RQST2,Z    BR IF DEVICE EOITEO 80604070
096B 0 7101           RQST3 MDX      1 1        80604080
```

096C 0 70FA	MOX	RQST1	80604100
096D 0 C028	LO	RQSTT	80604110
096E 0 D300	STD	3 0	80604120
096F 0 D200	STD	2 0	80604130
* 80604140			
0970 1 C400 081A	LD	L P16EF	80604150
0972 0 E043	AND	KFF80	80604160
0973 1 D400 081A	STD	L P16EF	80604170
0975 0 7008	MDX	RQSTC	80604180
* 80604190			
* 80604200			
0976 1 C500 0957	RQST2	LO L1 DDEFS&9	80604210
0978 0 D200	STD	2 0	80604220
0979 0 7201	MDX	2 1	80604230
097A 0 D300	STD	3 0	80604240
097B 0 7301	MOX	3 1	80604250
097C 1 C500 0960	LD	L1 OVAS&9	80604260
097E 0 D200	STD	2 0	80604270
097F 0 7201	MDX	2 1	80604280
0980 0 70EA	MDX	RQST3	80604290
* 80604300			
***** 80604310			
* 80604320			
* 80604330			
0981 0 4480 0131	RQSTC	BSI I REQDV	80604340
0983 1 09AD	DC	RQST5	80604350
0984 0 7012	RQST8	MDX RQST6	80604360
0985 0 7011	MOX	RQST6	80604370
0986 0 7010	MOX	RQST6	80604380
0987 0 700F	MOX	RQST6	80604390
0988 0 700E	MOX	RQST6	80604400
0989 0 700D	MOX	RQST6	80604410
098A 0 700C	MDX	RQST6	80604420
098B 0 700B	MDX	RQST6	80604430
098C 0 700A	MOX	RQST6	80604440
098D 0 7009	MOX	RQST6	80604450
098E 0 7008	MDX	RQST6	80604460
098F 0 7007	MDX	RQST6	80604470
0990 0 7006	MDX	RQST6	80604480
0991 0 7005	MDX	RQST6	80604490
0992 0 7004	MDX	RQST6	80604500
0993 0 7003	MDX	RQST6	80604510
0994 0 7002	MDX	RQST6	80604520
0995 0 7001	MDX	RQST6	80604530
0996 1 080A	RQSTT	DC TERM	80604540
***** 80604550			
0997 1 6700 0F38	RQST6	LDX L3 PTR8	80604560
0999 0 6109	LDX	1 9	80604570
099A 1 C580 0956	BUILD	LD 11 OVAS-1	80604580
099C 0 E816	DR	K0100	80604590
099D 0 D309	STD	3 WRT&1	80604600
099E 0 E815	DR	K0701	80604610
099F 0 D308	STD	3 PTR&1	80604620
09A0 1 C580 0956	LD	11 DVAS-1	80604630
09A2 1 EC00 08AC	OR	L K0400	80604640
09A4 0 D30D	STD	3 KEY&1	80604650
09A5 1 C580 0956	LD	11 DVAS-1	80604660
09A7 0 E80D	OR	K0200	80604670
09A8 0 D30F	STD	3 SEE&1	80604680
09A9 0 73EE	MDX	3 -18	80604690
09AA 0 71FF	MDX	1 -1	80604700
09AB 0 70EE	MDX	BUILD	80604710
* 80604720			
09AC 0 700D	MDX	SELT	80604730
* 80604740			
* 80604750			
09AD 1 6500 0981	RQST5	LDX L1 RQSTC	80604760
09AF 1 6D00 0809	RQST9	STX L1 MLSCF	80604770

09B1 0 4C80 012D	8SC	I	START	80604780
* 80604790				
* 80604800				
09B3 0 0100	K0100	DC	/0100	80604810
09B4 0 0701	K0701	DC	/0701	80604820
09B5 0 0200	K0200	DC	/0200	80604830
09B6 0 FF80	KFF80	DC	/FF80	80604840
09B7 0 0000	SWCMP	DC	/0000	80604850
09B8 0 0000	TEMP	DC	/0000	80604860
09B9 0 0000	PRSEL	DC	/0000	80604870
* 80604880				
098A 1 C400 0804	SELT	LD L SW2		80604890
09BC 0 1807	SRA	7		80604900
09BD 1 4C08 0C83	BSC	L TYEND,&	END IF NO SELECT	80604910
09BF 1 4400 08FE	BSI	L GD	DESELECT ALL PTRS	80604920
09C1 0 6109	LDX	1 9		80604930
09C2 1 6700 0F38	LDX	L3 PTR8		80604940
09C4 1 C400 0804	LD	L SW2		80604950
09C6 0 1806	SRA	6		80604960
09C7 0 4009	SELT7	BSI WHCH	SELECT PRINTER	80604970
09C8 0 C302	LD	3 STS		80604980
09C9 0 F096	EDR	K8000		80604990
09CA 1 4C20 09D8	8SC	L WHCH1,Z	BR IF PTR SELTD	80605000
* 80605010				
09CC 1 7401 09B9	MDX	L PRSEL,1	SELECT ONE PRINTER	80605020
09CE 0 C0F8	LD	SELT7		80605030
09CF 0 D302	STD	3 STS		80605040
09D0 0 7007	MDX	WHCH1		80605050
* 80605060				
* 80605070				
* 80605080				
* 80605090				
09D1 0 0000	WHCH	DC	/0000	80605100
* 80605110				
09D2 0 D0E5	STD	TEMP	CAN PTR BE LEGALLY	80605120
09D3 0 C0E4	WHCH2	LD TEMP	* SELECTED DR	80605130
09D4 0 1801	SRA	1		80605140
09D5 0 D0E2	STD	TEMP		80605150
09D6 0 4804	BSC	E		80605160
09D7 0 7004	MDX	WHCH4	FOUND ONE WNTD	80605170
09D8 0 73EE	WHCH1	MDX 3 -18		80605180
09D9 0 71FF	MDX	1 -1		80605190
09DA 0 70F8	MDX	WHCH2		80605200
09DB 0 7007	MDX	PRCDN		80605210
09DC 1 C580 0956	WHCH4	LD 11 DVAS-1		80605220
09DE 1 4C18 09D8	BSC	L WHCH1,&-	BR IF NO PTR THERE	80605230
09E0 1 4C80 09D1	8SC	I WHCH	RET TO SEL DR DESEL	80605240
* 80605250				
09E2 0 0000	ERIND	DC	/0000	80605260
* 80605270				
* 80605280				
* 80605290				
09E3 1 C400 0EAA	PRCON	LD L PTR0&STS	FETCH STS OF PTR0	80605300
09E5 0 1004	SLA	4		80605310
09E6 1 4C28 09F4	BSC	L CKERR,&Z	BR IF NO RELES PTR0	80605320
* 80605330				
09E8 1 C400 0803	LD	L SW1	FETCH ROUTINE NO	80605340
09EA 1 E400 0B06	AND	L BASIC	REMDVE 8AD BITS	80605350
09EC 0 F042	EOR	TWLV		80605360
09ED 1 4C20 09F3	BSC	L CKHAV,Z	BR IF NDT KBD RTN	80605370
* 80605380				
09EF 1 C400 081A	LD	L P16EF		80605390
09F1 1 4C28 09F4	BSC	L CKERR,&Z	BR IF 1816	80605400
* 80605410				
09F3 0 4022	CKHAV	BSI CKREL	CHECK RELEASE	80605420
* 80605430				
09F4 0 C0ED	CKERR	LD ERIND		80605440
09F5 1 4C20 0809	BSC	L INERR,Z	BR IF ERROR INDICATD	80605450

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 5

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 5A

1053/1816 FUNCTION TEST

```
09F7 1 C400 0804      LD  L  SW2
09F9 0 F0BD            EDR  SWCMP
09FA 0 1807            SRA   7
09FB 1 4C20 09BA      BSC  L  SELT,Z    BR IF SWS CNGED
*
09FD 0 C0BB            LD  PRSEL
09FE 1 4C08 0CB3      BSC  L  TYEND,&    BR IF LAST PTR DONE
*****
*
0A00 0 6600 0009      EXEC LDX  L2 9      RESTDRE RTN STATUS
0A02 1 6700 0F38      EXEC1 LDX L3 PTRB
*
0A04 0 C302            EXEC2 LD   3 STS
0A05 0 D060            STO  RESTO
0A06 1 4C10 0A42      BSC  L  EXEC3,-    BR IF PTR SVC RQSTD
*
0A08 0 B024            CMP  KF800
0A09 0 7027            MDX  SVCAD
0A0A 0 1001            SLA   1
0A0B 1 4C18 0A39      BSC  L  EXEC0,&-    TAKE NEXT PTR BRANCH
0A0D 0 180E            SRA   14
0A0E 1 B400 08F6      CMP  L  11        IS KBD SVC REQSTD
0A10 0 7028            MDX  EXEC0        NO - BRANCH
0A11 0 7002            MDX  EXEC5        SELECT KEYBOARD NEXT
0A12 0 6102            LDX  1 2        READ KBD SET UP
0A13 0 7031            MDX  EXEC6&1
*
0A14 0 6101            EXEC5 LDX  1 1    SELECT KEYBOARD SET
0A15 0 702F            MDX  EXEC6&1
*
0A16 0 0000            CKREL DC  *-*    RETURN ADRS
0A17 1 C400 0811      LD  L  DDEF0      GET MON DDEF
0A19 1 4C90 0A16      BSC  I  CKREL,-    BCH IF MON LOG RELEASED
*****
0A1B 0 4480 0132      BSI  I  RELDV    REL MON LOG DEVICE
0A1D 1 0811            DC  DDEF0
0A1E 1 080A            DC  TERM
*****
0A1F 0 6908            STX  1 CKRXT+1    SAVE XR1
0A20 0 6A09            STX  2 CKRXT+3    SAVE XR2
0A21 1 6700 0A27      LDX  L3 CKRXT    GET ENTRY
0A23 1 6F00 0809      STX  L3 MLSCF    * AND SET TARLE
0A25 0 4C80 012D      BSC  I  START    GD TO MONITDR
*
0A27 0 6500 0000      CKRXT LDX  L1 *-*    RESTORE XR1
0A29 0 6600 0000      LDX  L2 *-*    RESTDRE XR2
0A2B 1 4C80 0A16      BSC  I  CKREL
*
0A2D 0 F800            KF800 DC  /F800
0A2E 0 FC00            KFC00 DC  /FC00
0A2F 0 000C            TWLVE DC  12      CDNSTANT
0A30 0 000B            ELVEN DC  11      CONSTANT
*
0A31 0 6803            SVCAD STX  3 SVC&1    CDUNT DOWN FDR INT
0A32 1 7402 0A35      MDX  L  SVC&1,2
0A34 1 7401 0EAA      SVC  MDX  L  PTR0&STS,1
0A36 0 7002            MDX  EXEC0
0A37 0 6103            LDX  1 3        PRINT NO INT ERRDR
0A38 0 700C            MDX  EXEC6&1
*
0A39 0 73EE            EXEC0 MDX  3 -1B    TAKE NEXT PTR
0A3A 0 72FF            MDX  2 -1
0A3B 0 70C8            MDX  EXEC2
*
0A3C 0 6109            LDX  1 9        RESTORE RTN STATUS
0A3D 0 69C3            STX  1 EXEC&1
```

80605460
80605470
80605480
80605490
80605500
80605510
80605520
80605530
80605540
80605550
80605560
80605570
80605580
80605590
80605600
80605610
80605620
80605630
80605640
80605650
80605660
80605670
80605680
80605690
80605700
80605710
80605720
80605730
80605740
80605750
80605760
80605770
80605780
80605790
80605800
80605810
80605820
80605830
80605840
80605850
80605860
80605870
80605880
80605890
80605900
80605910
80605920
80605930
80605940
80605950
80605960
80605970
80605980
80605990
80606000
80606010
80606020
80606030
80606040
80606050
80606060
80606070
80606080
80606090
80606100
80606110
80606120
80606130

1053/1816 FUNCTION TEST

```
0A3E 1 6500 0F38      LDX  L1 PTR8
0A40 0 69C2            STX  1 EXEC1&1
0A41 0 7028            MDX  EXEC9
*
0A42 0 C0EB            EXEC3 LD   KFC00    SERVICE PRINTER
0A43 0 6100            LDX  1 0
*
0A44 0 D302            EXEC6 STO  3 STS    UPDATE PRINTER STS
0A45 0 73EE            MDX  3 -18
0A46 0 6BBC            STX  3 EXEC1&1
*
0A47 0 72FF            MDX  2 -1    SKIP IF PTR 0
0A48 0 7012            MDX  EXECA
*
0A49 0 6209            LDX  2 9        RESTORE RTN STATUS
0A4A 0 6AB6            STX  2 EXEC&1
0A4B 1 6600 0F38      LDX  L2 PTR8
0A4D 0 6AB5            STX  2 EXEC1&1
0A4E 0 40C7            BSI  CKREL    CHFCK RELEASE
*****
0A4F 1 7401 081C      MDX  L  INTSW,1    SET INTR SW
0A51 0 1000            NOP
0A52 0 4480 0131      BSI  I  REQDV    REQUEST USE OF MON * SC.
0A54 1 0A67            DC  EXEC7    * LOGGING DEVICE *
0A55 1 0811            DC  DDEF0    *
0A56 1 081D            DC  DVA0    *
0A57 1 080A            DC  TERM    *
*****
0A58 1 6700 0E96      EXEC8 LDX  L3 PTR0-18
0A5A 0 7001            MDX  ADRS
*
0A5B 0 6AA5            EXECA STX  2 EXEC&1    RESTDRE RTN STATUS
*
0A5C 0 7313            ADRS MDX  3 19    SETUP CHAR RTNN
0A5D 0 6B61            STX  3 MARKL&1
0A5E 0 73FF            MDX  3 -1
0A5F 0 6B5D            STX  3 MARKG&1
0A60 1 4D80 0A62      BSC  11 NEXT
*
*
*
0A62 1 0AF5            NEXT DC  READY    PRINTER READY & TYPE
0A63 1 0B53            DC  SELC2    KBD PROCEED STS
0A64 1 0B74            DC  KEYBD    READ KEY CHARACTER
0A65 1 0B4A            DC  NOIN     NO INTERRUPT EXIT
*
0A66 0 0000            RESTO DC  /0000
*
*
0A67 0 C0FE            EXEC7 LD   RESTO
0A68 1 0400 0EAA      STO  L  PTR0&STS
0A6A 1 6400 0AEF      EXEC9 LDX  L  MARKX
*****
0A6C 0 0001            I  DC  1
0A6D 0 0000            OUTWD DC  *-*    OUTPUT TEMP STG
*
0A6E 1 C400 0803      MARK LD  L  SW1
0A70 1 E400 0806      AND  L  BASIC    REMOVE BAD BITS
0A72 0 B0BD            CMP  L  ELVEN    IS TYPE SWS ROUTINE
0A73 0 1000            NOP
0A74 0 7047            MDX  MARKG    ND
*
0A75 1 C400 0805      LD  L  SW3
0A77 0 1808            SRA  8
0A78 0 F0F3            EOR  1
0A79 0 4820            BSC  Z        SKIP IF ILLEGAL CODE
```

80606140
80606150
80606160
80606170
80606180
80606190
80606200
80606210
80606220
80606230
80606240
80606250
80606260
80606270
80606280
80606290
80606300
80606310
80606320
80606330
80606340
80606350
80606360
80606370
80606380
80606390
80606400
80606410
80606420
80606430
80606440
80606450
80606460
80606470
80606480
80606490
80606500
80606510
80606520
80606530
80606540
80606550
80606560
80606570
80606580
80606590
80606600
80606610
80606620
80606630
80606640
80606650
80606660
80606670
80606680
80606690
80606700
80606710
80606720
80606730
80606740
80606750
80606760
80606770
80606780
80606790
80606800
80606810

DATE 28FEB66 01MAY66 27JUN66 01OCT67 17JUN68 14NOV69 20MAR70
EC NO. 415120 415120A 415178A 411875 411939 431319 431320

PRG ID 0806-1
PAGE 5

DATE 28FEB66 01MAY66 27JUN66 01OCT67 17JUN68 14NOV69 20MAR70
EC NO. 415120 415120A 415178A 411875 411939 431319 431320

PRG ID 0806-1
PAGE 5A

1053/1816 FUNCTION TEST

```
0A7A 0 F0F1      EOR      I
0A7B 0 00F1      STO      OUTWO
0A7C 0 C303      LD        3 OUT      SAVE RHS OF OLO WORD
0A7D 0 18C8      RTE        8
0A7E 0 80EE      CMP        OUTWO      CK IF SHOULD BE
0A7F 0 1000      NOP          * SHIFTEO
0A80 0 700A      MOX        MARKB

*
0AB1 1 C400 0805  LD        L SW3
0AB3 0 1008      SLA        8      TAKE RIGHT HALF WORD
0AB4 0 1808      SRA        8
0AB5 0 F0E6      ENR        I
0AB6 0 4820      BSC        Z      SKIP IF ILLEGAL CODE
0AB7 0 F0E4      EOR        I
0AB8 0 1088      MARKA     SLT        8
0AB9 0 D303      STO        3 OUT
0ABA 0 7064      MDX        MARKX

*
0AB8 0 C0E1      MARKB     LO        OUTWO
0ABC 0 70FB      MDX        MARKA

*
*
0A80 0 6805      MARK2     STX        3 MARKR&1
0ABE 1 C400 0B47  LO        L F0200      SET UP TIME COUNTER
0A90 1 D400 0C8A  STO        L TIMEX
0A92 0 6700 0000  MARKR     LOX        L3 /0000      RESTORE INOEX REGS
0A94 1 6500 0A92  LOX        L1 MARKR
0A96 0 C302      LO        3 STS
0A97 1 74FF 0C8A  MDX        L TIMEX,-1      OECR TIMER
0A99 0 7001      MOX        MARKQ
0A9A 0 7002      MOX        MARKP
0A9B 1 4C28 0C7E  MARKQ     BSC        L PDSWX,&Z      BR IF NO INT YET
0A9D 1 C400 0960  MARKP     LO        L K8000      DESELECT PRINTER
0A9F 0 0302      STO        3 STS
0AA0 1 74FF 09B9  MOX        L PRSEL,-1
0AA2 0 1000      NOP

*
0AA3 0 6600 0001  RSAOR     LDX        L2 1      RESTORE START ADDR
0AA5 0 7201      MARK3     MOX        2 1
0AA6 0 0301      STO        3 RTN
0AA7 1 6E80 0ABF  STX        12 MARKL&1

*
0AA9 1 C680 0C8A  MARK4     LO        12 FUNR-1
0AAB 0 D304      STO        3 ITR

*
0AAC 0 1810      SRA        16      RESTORE WORDS PT
0AA0 0 0307      STO        3 PAD

*
0AAE 1 C600 0C8A  MARK5     LD        L2 FUNR-1      RESTORE TEST PT
0AB0 1 F400 0C95  ENR        L FUND      CK FOR TERMINATOR
0AB2 1 4C18 0A80  BSC        L MARK2,+      BR IF TERMINATOR
0AB4 1 C600 0C8A  LD        L2 FUNR-1

*
0AB6 0 8307      A          3 PAO
0AB7 0 0300      STO        3 ADR

*
0AB8 0 1810      SRA        16      RESTORE WORDS PRTO
0AB9 0 D306      STO        3 NOS

*
0ABA 0 C0B1      LD        I      RESTORE SHIFT WORD
0ABB 0 0305      STO        3 SLT

*
0ABC 0 6580 0000  MARKG     LDX        11 /0000      RESTORE INOEX REGS
0ABE 0 6680 0000  MARKL     LDX        12 /0000

*
0AC0 0 C305      LO        3 SLT      BUMP SFF WO BY ONE
0AC1 0 80AA      A          I
0AC2 0 D305      STO        3 SLT
```

80606820
80606830
80606840
80606850
80606860
80606870
80606880
80606890
80606900
80606910
80606920
80606930
80606940
80606950
80606960
80606970
80606980
80606990
80607000
80607010
80607020
80607030
80607040
80607050
80607060
80607070
80607080
80607090
80607100
80607110
80607120
80607130
80607140
80607150
80607160
80607170
80607180
80607190
80607200
80607210
80607220
80607230
80607240
80607250
80607260
80607270
80607280
80607290
80607300
80607310
80607320
80607330
80607340
80607350
80607360
80607370
80607380
80607390
80607400
80607410
80607420
80607430
80607440
80607450
80607460
80607470
80607480
80607490

1053/1816 FUNCTION TEST

```
0AC3 1 4C04 0AC7  *      BSC        L MARKS,E      SHIFT IF ODD
0AC5 0 C101      LD        1 1      FETCH OUTPUT WORD
0AC6 0 7008      MDX        MARKN

*
0AC7 0 C306      MARKS     LO        3 NOS      BUMP WORDS BY ONE
0AC8 0 80A3      A          I
0AC9 0 D306      STO        3 NOS

*
0ACA 0 7101      MDX        1 1
0ACB 1 6D80 0ABD  STX        11 MARKG&1
0AC0 0 C100      LD        1 0      FETCH OUTPUT CHAR
0ACE 0 1008      SLA        8      SHIFT IT

*
0ACF 0 D303      MARKN     STO        3 OUT      SAVE NEXT OUTPUT WD

*
0A00 0 F032      ENR        KFF00
0A01 1 4C20 0AEF  BSC        L MARKX,Z      BR IF NOT END OF FCN

*
0A03 0 C304      LD        3 ITR      DECREMENT ITCNT
0A04 0 9097      S          I
0AD5 0 D304      STO        3 ITR
0AD6 1 4C20 0AAE  BSC        L MARK5,Z      BR IF NO DO AGAIN

*
0A08 0 C306      LD        3 NOS      UPOATE MOOIFIER WORD
0A09 0 8092      A          I
0ADA 0 D306      STO        3 NOS
0ADB 0 8307      A          3 PAD
0ADC 0 D307      STO        3 PAD

*
*
0ADD 0 C101      LD        1 1      FFTCH NEXT REPEAT CT
0ADE 0 D304      STO        3 ITR
0ADF 0 F024      ENR        KFFFF
0AE0 1 4C20 0AAE  BSC        L MARK5,Z      BR IF NOT END OF RTN
0AE2 1 C400 0803  MARKK     LD        L SW1
0AE4 0 F021      AND        BASIC      ASSURE PROPER ENTRY
0AE5 1 4C18 0AA5  BSC        L MARK3,&-      BR IF NO RTN SELECT

*
0AE7 0 801F      CMP        ALL
0AE8 0 70BC      MDX        MARK3      BR IF RTN TOO LARGE
0AE9 0 1000      NOP
0AEA 0 8019      A          KFFFF      INITIALIZE RTN GIVEN
0AEB 0 D001      STO        *&1
0AEC 0 6600 0001  LOX        L2 1
0AEE 0 70B6      MDX        MARK3

*
*
0AEF 1 6500 09E3  MARKX     LDX        L1 PRCON      SET RETURN ADDRESS
0AF1 1 6D00 0809  STX        L1 MLSCF
0AF3 0 4C80 012D  BSC        I START

*****
*
0AF5 0 10A0      REAOY     SLT        32
0AF6 0 080A      XIO        3 PTR      SENSE - RESET DSW
0AF7 1 4420 088C  BSI        L DETE,Z      CHECK 1053 FOR 1816
0AF9 0 7026      MDX        TYPIT      DSW OK

*
0AFA 0 6101      RYOER     LDX        1 1      ERROR - NOT BUSY
0AFB 1 4400 0C30  BSI        L PROSW      MC
0AFD 1 6780 0C88  LDX        13 PTRAD
0AFF 0 C005      LD        KOC00
0B00 0 D302      STO        3 STS
0B01 1 4C00 0A00  BSC        L EXEC

*****
*
```

80607500
80607510
80607520
80607530
80607540
80607550
80607560
80607570
80607580
80607590
80607600
80607610
80607620
80607630
80607640
80607650
80607660
80607670
80607680
80607690
80607700
80607710
80607720
80607730
80607740
80607750
80607760
80607770
80607780
80607790
80607800
80607810
80607820
80607830
80607840
80607850
80607860
80607870
80607880
80607890
80607900
80607910
80607920
80607930
80607940
80607950
80607960
80607970
80607980
80607990
80608000
80608010
80608020
80608030
80608040
80608050
80608060
80608070
80608080
80608090
80608100
80608110
80608120
80608130
80608140
80608150
80608160
80608170

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

1053/1816 FUNCTION TEST

PART NO. 2196366
PAGE 7

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

1053/1816 FUNCTION TEST

PART NO. 2196366
PAGE 7A

```

*
OB03 0 FF00      KFF00 DC      /FF00      CDNSTANTS
OB04 0 FFFF      KFFFF DC     /FFFF
OB05 0 0C00      KOC00 DC     /OC00
OB06 0 000F      BASIC DC     /000F      BASIC ROUTINES
OB07 0 000A      ALL DC       FUND-FUNR  ALL TYPEWRITER RTNS
OB08 0 0012      TIMEB DC     /0012      TIME TO LATCH CLUTCH
*****
*
*          PRINT INTERRUPT DSW ERRDR
*
OB09 0 10A0      INERR SLT     32          RESET ERROR IND
OB0A 1 D400 09E2      STD L ERIND
OB0C 1 6700 0F38      INERO LDX L3 PTR8      WHICH PTR MADE ERRDR
OB0E 0 6209          LDX 2 9
OB0F 0 B810          INER1 DCM 3 ERR
OB10 0 1000          NDP
OB11 0 7005          MDX INER2          GDT IT - PRINT ERRDR
OB12 0 73EE          MDX 3 -18
OB13 0 72FF          MDX 2 -1
OB14 0 70FA          MDX INER1          CHECK ALL PRINTERS
OB15 1 4C00 09E3      BSC L PRCDN          RETURN - ND MDRE ERR
*
OB17 0 CB10          INER2 LDD 3 ERR          PRINT INTRPT DSW
OB18 0 6103          LDX 1 3          * ERRDR
OB19 1 4400 0C30      BSI L PRDSW
OB1B 1 6780 0C88      LDX 13 PTRAD
OB1D 0 10A0          SLT 32
OB1E 0 DB10          STD 3 ERR          RESET ERRDR IND
OB1F 0 70EC          MDX INERO          RETURN TO CHECK AGN
*****
*
*          PRINT ONE CHARACTER
*
OB20 1 C400 0802      TYPIT LD L SWO          GET FUNCTIONDS
OB22 1 4C10 0B33      BSC L TDLY6,-        BCH IF ND DELAY
OB24 0 C0E3          LD TIMEB          GET DELAY COUNT
OB25 1 D400 0C8A      STO L TIMEX          STORE IN COUNTER
*
OB27 1 6500 0B2E      TDLY2 LDX L1 TDLY4      GET RETURN
OB29 1 6D00 0B09      STX L1 MLSCF          * AND STDR IN TABLE
OB2B 0 6B03          STX 3 TDLY4&1        SAVE XR 3
OB2C 0 4C80 012D      BSC I START          GO TO MONITOR
*
OB2E 0 6700 0000      TDLY4 LDX L3 *-*        RESTDRE XR 3
OB30 1 74FF 0C8A      MDX L TIMEX,-1        REDUCE DELAY COUNT
OB32 0 70F4          MDX TDLY2
*
OB33 0 0B08          TDLY6 XID 3 WRT          PRINT CHARACTER
OB34 0 0B0A          XIO 3 PTR          SENSE - RESET DSW
OB35 0 D00C          STO DSWBY
*
*          CHECK BUSY DSW
*
OB36 0 F0CE          ENR KOC00
OB37 1 4420 088C      BSI L DETE,Z          CHECK 1053 FOR 1816
OB39 0 7006          MDX BSYOK          DSW DK
*
OB3A 0 C807          BSYER LDD DSWBY          PRINT BUSY DSW ERROR
OB3B 0 6102          LDX 1 2
OB3C 1 4400 0C30      BSI L PRDSW
OB3E 1 6780 0C88      LDX 13 PTRAD
OB40 1 4C00 0A6E      BSYOK BSC L MARK
*****
*
*
OB42 0 0000          BSS E 0
OB42 0 0000          DSWBY DC /0000          LAST BUSY DSW
OB43 0 0C00          FOC00 DC /0C00          BUSY DSW S/B

```

80608180
80608190
80608200
80608210
80608220
80608230
80608240
80608250
80608260
80608270
80608280
80608290
80608300
80608310
80608320
80608330
80608340
80608350
80608360
80608370
80608380
80608390
80608400
80608410
80608420
80608430
80608440
80608450
80608460
80608470
80608480
80608490
80608500
80608510
80608520
80608530
80608540
80608550
80608560
80608570
80608580
80608590
80608600
80608610
80608620
80608630
80608640
80608650
80608660
80608670
80608680
80608690
80608700
80608710
80608720
80608730
80608740
80608750
80608760
80608770
80608780
80608790
80608800
80608810
80608820
80608830
80608840
80608850

OB44 0 0000
OB45 0 0000
OB46 0 0000
OB47 0 0200
OB48 0 0000
OB49 0 0100

OB4A 1 C400 0960
OB4C 0 18D0
OB4D 0 0B0A
OB4E 0 6104
OB4F 1 4400 0C30
OB51 1 4C00 09E3

OB53 0 0B0A
OB54 0 D0EF
OB55 0 18CB
OB56 1 4C04 09E3
OB58 1 6500 0B5E
OB5A 1 6D00 0B09
OB5C 0 4C80 012D

OB5E 1 6780 0ABD
OB60 0 C06A
OB61 0 D302
OB62 0 C8E1
OB63 1 4C18 0B67

OB65 0 6101
OB66 0 7009
OB67 0 0B0C

OB68 0 0B0A
OB69 0 D0DC
OB6A 0 F0DC
OB6B 1 4C18 09E3

OB6D 0 C8D8
OB6E 0 6106
OB6F 0 7000

OB70 1 4400 0C30
OB72 1 6400 0A67

OB74 0 0B0F
OB75 0 10A0
OB76 0 0B0A
OB77 1 4C18 0B7E
OB79 0 6107
OB7A 1 4400 0C30
OB7C 1 6780 0C88

OB7E 0 C30C

```

DSWAS DC /0000      LAST READY DSW
DC /0000
DSWBS DC /0000
F0200 DC /0200
DSWCS DC /0000      STO PROT ERROR DSW
DC /0100          DSW S/B
*****
*
*          PRINT ND INTERRUPT ERRDR
*
NOIN LD L K8000
RTE 16
XID 3 PTR          SENSE - RESET DSW
LDX 1 4
BSI L PRDSW
BSC L PRCON
*****
*
*          KEYBOARD TEST
*
*          SELECT KEYBOARD ROUTINE
*
SELC2 XID 3 PTR          SENSE AND SAVE DSW
STO DSWAS
RTE 11
BSC L PRCON,E      BR IF PTR BUSY
LDX L1 SELC3
STX L1 MLSCF
BSC I START
*
*
SELC3 LDX 13 MARKG&1
LD KF000          RESET PTR STATUS
STO 3 STS
LDD DSWAS
BSC L SELC,E-      BR IF DSW OK
*
LDX 1 1          PRINT DSW ERROR
MDX SELC1
SELC XID 3 KEY          SELECT KEYBOARD
*
XID 3 PTR          SENSE - RESET DSW
STO DSWBS
FOR F0200
HSC L PRCON,E-      BR IF DSW OK
*
LDD DSWBS          PRINT DSW ERROR
LDX 1 6
MDX SELC1
*
SELC1 BSI L PRDSW
LDX L EXEC7          TRY AGAIN - LATER
*****
*
*          DECODE CHARACTER KEYED IN
*
KEYBD XID 3 SEE          READ AND SAVE CHAR
SLT 32
XID 3 PTR          SENSE - RESET DSW
HSC L KEYPT,E-
LDX 1 7          PRINT DSW ERROR
BSI L PRDSW
LDX 13 PTRAD
*
KEYPT LD 3 KEY          SAVE KEY CHARACTER

```

80608860
80608870
80608880
80608890
80608900
80608910
80608920
80608930
80608940
80608950
80608960
80608970
80608980
80608990
80609000
80609010
80609020
80609030
80609040
80609050
80609060
80609070
80609080
80609090
80609100
80609110
80609120
80609130
80609140
80609150
80609160
80609170
80609180
80609190
80609200
80609210
80609220
80609230
80609240
80609250
80609260
80609270
80609280
80609290
80609300
80609310
80609320
80609330
80609340
80609350
80609360
80609370
80609380
80609390
80609400
80609410
80609420
80609430
80609440
80609450
80609460
80609470
80609480
80609490
80609500
80609510
80609520
80609530

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM				PART NO. 2196366
1053/1816 FUNCTION TEST				PAGE 8
OB7F 0 D04C	STO	KEYCR	80609540	
OB80 1 7400 080F	MDX L	ONLIN,0	80609550	
OB82 0 7002	MDX	*E2	80609560	
OB83 0 2F41 000C	STS L3	KEY,/41	80609570	
OB85 0 080E	XIO	3 SEE	80609580	
OB86 0 2F40 000C	STS L3	KEY,/40	80609590	
OB88 0 080A	XIO	3 PTR	80609600	
OB89 0 D08E	STO	OSWCS	80609610	
OB8A 0 F08E	EOR	OSWCS&1	80609620	
OB8B 1 4C18 0893	BSC L	KEYIN,&-	80609630	
* BR IF DSW OK				
OB8D 0 C88A	LOD	DSWCS	80609640	
OB8E 0 6108	LDX	1 8	80609650	
OB8F 1 4400 0C30	BSI L	PRDSW	80609660	
OB91 1 6780 0C8B	LDX	13 PTRAD	80609670	
* PRINT ERROR IN DSW				
OB93 0 080E	KEYIN XIO	3 SEE	80609680	
OB94 0 C037	LD	KEYCR	80609690	
OB95 0 F30C	EDR	3 KEY	80609700	
OB96 0 1800	RTE	16	80609710	
OB97 0 C034	LO	KEYCR	80609720	
OB98 0 D30C	STO	3 KEY	80609730	
OB99 0 1800	RTE	16	80609740	
OB9A 1 4C18 0BA2	BSC L	WRDCT,&-	80609750	
OB9C 0 F02F	EOR	KEYCR	80609760	
OB9D 0 6109	LDX	1 9	80609770	
OB9E 1 4400 0C30	BSI L	PRDSW	80609780	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609790	
* PRINT ERROR IN READ				
OB9A 1 6780 0C88	LOX	13 PTRAD	80609800	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609810	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609820	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609830	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609840	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609850	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609860	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609870	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609880	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609890	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609900	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609910	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609920	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609930	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609940	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609950	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609960	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609970	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609980	
OB9A 1 6780 0C88	LOX	13 PTRAD	80609990	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610000	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610010	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610020	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610030	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610040	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610050	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610060	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610070	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610080	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610090	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610100	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610110	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610120	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610130	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610140	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610150	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610160	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610170	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610180	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610190	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610200	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610210	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610220	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610230	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610240	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610250	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610260	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610270	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610280	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610290	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610300	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610310	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610320	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610330	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610340	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610350	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610360	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610370	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610380	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610390	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610400	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610410	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610420	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610430	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610440	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610450	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610460	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610470	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610480	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610490	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610500	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610510	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610520	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610530	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610540	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610550	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610560	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610570	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610580	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610590	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610600	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610610	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610620	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610630	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610640	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610650	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610660	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610670	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610680	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610690	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610700	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610710	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610720	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610730	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610740	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610750	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610760	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610770	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610780	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610790	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610800	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610810	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610820	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610830	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610840	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610850	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610860	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610870	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610880	
OB9A 1 6780 0C88	LOX	13 PTRAD	80610890	

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 9

1053/1816 FUNCTION TEST

```
0C0A 0 1000      NOP
0C0B 1 D600 0CB2  ERSE2  STO L2 ANY&28
0C0D 0 C0B8      LD      BSPSE      SET BACKSPACE CODE
0C0E 0 D303      STO      3 OUT      * IN OUTPUT WORD
0C0F 0 70D4      MDX      TBLI
*****
*
*          TERMINATE MESSAGE ROUTINE
*
0C10 1 C400 0C99  ENDM  LD L ANY&3
0C12 1 6680 0BA3  LDX  I2 WRDCT&1
0C14 1 4C18 0C25  BSC L ENDM2,&- BR IF TABLE EMPTY
0C16 0 C0AF      LD      SLTWD
0C17 1 4C18 0C1D  BSC L ENDM1,&- BR IF LAST SHIFTEO
0C19 1 EE00 0CB1  OR L2 ANY&27
0C1B 1 D600 0CB1  STO L2 ANY&27
*
0C1D 1 C400 0D83  ENDM1 LD L RED1 SET TABLE TERMINATOR
0C1F 1 D600 0CB2  STO L2 ANY&28
0C21 0 C073      LD      FUNO
0C22 1 D600 0CB3  STO L2 ANY&29
0C24 0 7002      MDX      ENDM3
*
0C25 0 C06F      ENDM2 LD FUNO SET TABLE TERMINATOR
0C26 0 D071      STO ANY&2
*
0C27 0 C0A2      ENDM3 LD K0008 RESTORE PTR RTN
0C28 0 D302      STO 3 STS
*
*
0C29 0 6200      LDX 2 0
0C2A 1 6E00 0AA4  STX L2 RSADR&1
0C2C 1 6E00 0803  STX L2 SW1
*
0C2E 1 4C00 0AE2  BSC L MARKK RESTART PRINTER
*****
*
*          PRINT ERROR ROUTINE
*
0C30 0 0000      PRDSW DC /0000 ME
*
0C31 0 D854      STD EMESG&4 SAVE DATA WAS & S/B
0C32 0 6951      STX 1 EMESG&2 SAVE MESSAGE NUMBER
0C33 0 C050      LD EMESG&2
0C34 0 E854      OR KE000
0C35 0 D04E      STO EMESG&2
*
0C36 0 6B51      STX 3 PTRAD SET UP MESG ID NO
0C37 0 C30A      LD 3 PTR
0C38 0 1008      SLA 8
0C39 0 1808      SRA 8
0C3A 0 D04A      STO EMESG&3
*
0C3B 0 C301      LD 3 RTN FETCH RTN NO
0C3C 1 D400 0800  STO L RID
*
0C3E 1 C400 0803  LD L SW1
0C40 1 E400 0806  AND L BASIC REMOVE BAD BITS
0C42 1 B400 0A30  CMP L ELVEN BR IF ROUTINE ELEVEN
0C44 0 1000      NOP
0C45 0 7002      MDX ERDLY
*
0C46 1 D400 0800  STO L RID SET ROUTINE NO
*
0C48 1 C400 0B47  ERDLY LO L F0200 SET UP DELAY COUNTER
0C4A 0 D03F      STO TIMEX
0C4B 1 C400 0EAA  RELCK LO L PTR0&STS
0C4D 0 F03B      EOR KE000
```

80610900
80610910
80610920
80610930
80610940
80610950
80610960
80610970
80610980
80610990
80611000
80611010
80611020
80611030
80611040
80611050
80611060
80611070
80611080
80611090
80611100
80611110
80611120
80611130
80611140
80611150
80611160
80611170
80611180
80611190
80611200
80611210
80611220
80611230
80611240
80611250
80611260
80611270
80611280
80611290
80611300
80611310
80611320
80611330
80611340
80611350
80611360
80611370
80611380
80611390
80611400
80611410
80611420
80611430
80611440
80611450
80611460
80611470
80611480
80611490
80611500
80611510
80611520
80611530
80611540
80611550
80611560
80611570

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 9A

1053/1816 FUNCTION TEST

```
0C4E 0 4818      BSC &- BR IF WAIT FOR INT
0C4F 0 C02E      LD PDSWX
0C50 0 1004      SLA 4
0C51 1 4C10 0C56  BSC L CXREL,- BR IF INTRPT RECD
0C53 1 74FF 0C8A  MDX L TIMEX,-1 FALL THRU IF TIME UP
0C55 0 7023      MDX TIME1
0C56 1 C400 0811  CXREL LD L D0EFO
0C58 1 4C10 0C5E  BSC L ERDSW,- BR IF PTR 0 RELEASED
*****
0C5A 0 4480 0132  BSI I RELOV *
0C5C 1 0811      DC D0EFO *
0C5D 1 080A      DC TFRM *
*****
0C5E 0 4480 0130  ERDSW BSI I ERROR * SC
0C60 1 0C82      DC EMESG MESSAGE ADDR *
0C61 1 0C7C      DC CKDSX BUSY RETURN ADDR *
0C62 1 0C63      DC FRLOP LOOP ON ERROR ADDR *
*****
0C63 1 6500 0C66  FRLOP LDX L1 ERDUO
0C65 0 7018      MDX POSWX EXIT TO MONITOR
0C66 1 6580 0C30  ERDUO LDX I1 PROSW RETURN TO TPR PROG
0C68 1 C400 0811  LD L D0EFO
0C6A 1 4C18 0C7E  BSC L PDSWX,&- BR IF NO PTR ZERO
*****
0C6C 1 7401 081C  MDX L INTSW,1 SET INTR SW
0C6E 0 1000      NOP
0C6F 0 4480 0131  ERGET BSI I REQDV REQ MON LOG DEV *
0C71 1 0C76      DC ERBUY BUSY RETURN *
0C72 1 0811      DC D0EFO *
0C73 1 081D      DC DVAO *
0C74 1 080A      DC TERM *
*****
0C75 0 7008      MDX PDSWX
*
0C76 1 6500 0C66  ERBUY LDX L1 ERDUO TRY AGAIN - LATER
0C78 0 7005      MDX POSWX
*
0C79 1 6500 0C4B  TIME1 LDX L1 RELCK
0C7B 0 7002      MDX PDSWX
*
0C7C 1 6500 0C5E  CKDSX LDX L1 ERDSW BUSY RETURN TO CALL
0C7E 1 6D00 0809  POSWX STX L1 MLSCF
0C80 0 4C80 012D  BSC I START MX
*
0C82 0 0000      BSS E 0
0C82 0 0003      EMESG DC 3 WORD COUNT
0C83 0 0000      DC /0000 HEX OUTPUT
0C84 0 0000      DC /0000 MESSAGE IO NO
0C85 0 0000      DC /0000 PRINTER NUMBER
0C86 0 0000      DC /0000 OSWAS
0C87 0 0000      DC /0000 DSW S/B
*
0C88 0 0000      PTRAO DC /0000 PRINTER ADRS
0C89 0 E000      KE000 DC /E000 ERROR ID
0C8A 0 0000      TIMEX DC /0000 DELAY TIME STORAGE
*****
*
*          PRINTER TEST SEQUENCE
*          CONTROL TABLE
*
0C88 1 0C96      FUNR DC ANY KEYBOARD OPTION
0C8C 1 0073      DC TACAR TAB & CARRIER RETURN
0C8D 1 0085      DC UCASE UPPER CASE CHARS
0C8E 1 0DA2      DC LCASE LOWER CASE CHARS
0C8F 1 0D8F      DC COLOR COLOR SHIFT ROUTINE
0C90 1 0DD5      DC SPNDX BACKSPACE AND INDEX
0C91 1 0DF4      DC AUCAR AUTO CARRIER RETURN
```

1053/1816 FUNCTION TEST

```
OC92 1 0E00      DC      ROCK      TEST TILT
OC93 1 0E40      OC      ROLL      TEST ROTATE
OC94 1 0E73      DC      TWIST     TEST TILT AND ROTATE
OC95 0 FFFF      FUNO DC      /FFFF      *
```

*

KEYBOARD OPTION TABLE

*

```
OC96 0 0001      ANY      OC      1      ITCNT
OC97 0 05FF      DC      /05FF     BLACK
OC98 0 FFFF      OC      /FFFF     ITCNT
OC99 0 0000      DC      /0000
OC9A 0 0000      DC      /0000
OC9B 0 0000      DC      /0000
OC9C 0 0000      OC      /0000
OC9D 0 0000      OC      /0000
OC9E 0 0000      DC      /0000
OC9F 0 0000      DC      /0000
OCA0 0 0000      OC      /0000
OCA1 0 0000      DC      /0000
OCA2 0 0000      OC      /0000
OCA3 0 0000      OC      /0000
OCA4 0 0000      DC      /0000
OCA5 0 0000      DC      /0000
OCA6 0 0000      OC      /0000
OCA7 0 0000      DC      /0000
OCA8 0 0000      DC      /0000
OCA9 0 0000      DC      /0000
OCAA 0 0000      OC      /0000
OCAB 0 0000      DC      /0000
OCAC 0 0000      DC      /0000
OCAD 0 0000      DC      /0000
OCAE 0 0000      OC      /0000
OCAF 0 0000      OC      /0000
OCB0 0 0000      DC      /0000
OCB1 0 0000      DC      /0000
OCB2 0 FFFF      DC      /FFFF
```

*

END PROGRAM ROUTINE

*

```
OCB3 0 C044      TYEND LD      KEC00&5  SET UP DELAY COUNTER
OCB4 0 D0D5      STO      TIMEX
OCB5 1 6500 OCB5  *      AWAIT LDX L1 AWAIT      SET RETURN ADDRESS
OCB7 1 74FF OCB8  *      MDX L TIMEX,-1  DECREMENT COUNTER
OCB9 0 70C4      MOX      POSWX
```

*

*

```
OCB8 0 0000      TEND DC      /0000
OCBD 0 1010      SLA      16
OCBE 1 0400 0803 STO L SW1
OCC0 0 6500 FFFF LDX L1 -1      RESET KEYIN OPTION
OCC2 0 6905      STX      1 ANY&2
```

*

```
OCC3 0 6101      LDX      1 1
OCC4 1 6D00 0AA4 STX L1 RSAOR&1
OCC6 1 6700 0F38 LDX L3 PTR8      RESTORE PTRS RESTART
OCC8 0 6109      LDX      1 9
OCC9 1 C400 08F6 TEN01 LD L 11
OCCB 0 9301      STO      3 RTN
OCCC 1 C400 0C8C LD L FUNR&1
OCCE 0 0300      STO      3 ADR
```

80612260
80612270
80612280
80612290
80612300
80612310
80612320
80612330
80612340
80612350
80612360
80612370
80612380
80612390
80612400
80612410
80612420
80612430
80612440
80612450
80612460
80612470
80612480
80612490
80612500
80612510
80612520
80612530
80612540
80612550
80612560
80612570
80612580
80612590
80612600
80612610
80612620
80612630
80612640
80612650
80612660
80612670
80612680
80612690
80612700
80612710
80612720
80612730
80612740
80612750
80612760
80612770
80612780
80612790
80612800
80612810
80612820
80612830
80612840
80612850
80612860
80612870
80612880
80612890
80612900
80612910
80612920
80612930

1053/1816 FUNCTION TEST

```
OCCE 1 C400 0D74 LD L TACAR&1
OC01 0 D303      STO      3 OUT
OC02 0 C0C3      LD      ANY
OC03 0 D304      STO      3 ITR
OC04 0 D305      STO      3 SLT
OC05 0 1801      SRA      1
OC06 0 D306      STO      3 NOS
OC07 0 0307      STO      3 PA0
OC08 0 73EE      MDX      3 -18
OC09 0 71FF      MDX      1 -1
OCDA 0 70EE      MDX      TEN01
```

```
OC08 0 4480 0132 BSI I RELOV      RELEASE ALL PTRS *
OC00 0 700B      TEN03 MDX      TEND2      *
OCDE 0 700A      MDX      TEND2      *
OCDF 0 7009      MDX      TEND2      *
OCE0 0 7008      MDX      TEND2      *
OCE1 0 7007      MDX      TEND2      *
OCE2 0 7006      MDX      TEND2      *
OCE3 0 7005      MDX      TEND2      *
OCE4 0 7004      MDX      TEND2      *
OCE5 0 7003      MDX      TEND2      *
OCE6 0 7002      MDX      TEND2      *
OCE7 0 7001      MDX      TEND2      *
OCE8 1 080A      DC      TERM      *
```

```
OCE9 1 C400 081B TEND2 LD L DDEEX      GET SAVED DDEF
OCEB 1 D400 0811 STO L DDEE0      * AND RESTORE SW2
OCED 1 C400 08F8 LD L SWSTG
OCEF 1 D400 0804 STO L SW2
OCE1 1 4C80 0CBC RSC I TEND
```

*

KEYBOARD CODE TABLE

*

```
KECOD DC      /4220      *
OCF3 0 4220      DC      /3000      /
OCF4 0 3000      DC      /2000      0
OCF5 0 2000      DC      /1000      1
OCF6 0 1000      DC      /0800      2
OCF7 0 0800      DC      /0400      3
OCF8 0 0400      DC      /0200      4
OCF9 0 0200      DC      /0100      5
OCFA 0 0100      DC      /0080      6
OCFB 0 0080      DC      /0040      7
OCFC 0 0040      DC      /0020      8
OCFD 0 0020      DC      /0010      9
OCFE 0 0010      DC      /4420      $
OCFF 0 4420      DC      /8420      .
OD00 0 8420      DC      /2420      ,
OD01 0 2420      DC      /00A0      #
OD02 0 00A0      DC      /0120      @
OD03 0 0120      DC      /8120      %
OD04 0 8120      DC      /4120      □
OD05 0 4120      DC      /80A0      &
OD06 0 80A0      DC      /4000      -
OD07 0 4000      DC      /8820      CENT SIGN
OD08 0 8820      DC      /8220      LESS THAN
OD09 0 8220      DC      /8060      LOGICAL OR
OD0A 0 8060      DC      /8000      AND
OD0B 0 8000      DC      /4820      EXCLAMATION
OD0C 0 4820      DC      /40A0      SEMI COLON
OD0D 0 40A0      DC      /4060      LOGICAL NOT
OD0E 0 4060      DC      /2220      PER CENT
OD0F 0 2220      DC      /2120      UNDERSCORE
OD10 0 2120      DC      /20A0      GREATER THAN
OD11 0 20A0      DC      /2060      QUESTION MARK
OD12 0 2060
```

80612940
80612950
80612960
80612970
80612980
80612990
80613000
80613010
80613020
80613030
80613040
80613050
80613060
80613070
80613080
80613090
80613100
80613110
80613120
80613130
80613140
80613150
80613160
80613170
80613180
80613190
80613200
80613210
80613220
80613230
80613240
80613250
80613260
80613270
80613280
80613290
80613300
80613310
80613320
80613330
80613340
80613350
80613360
80613370
80613380
80613390
80613400
80613410
80613420
80613430
80613440
80613450
80613460
80613470
80613480
80613490
80613500
80613510
80613520
80613530
80613540
80613550
80613560
80613570
80613580
80613590
80613600
80613610

DATE	28FEB66	01MAY66	27JUN66	01OCT67	17JUN68	14NOV69	20MAR70	PRG ID	0806-1
EC NO.	415120	415120A	415178A	411875	411939	431319	431320	PAGE	11A

1053/1816 FUNCTION TEST

0D8E 0 7E5A	DC	/7E5A	J	K
0D8F 0 5E72	DC	/5E72	L	M
0D90 0 7652	DC	/7652	N	O
0D91 0 5666	DC	/5666	&	Q
0D92 0 629A	DC	/629A	R	S
0D93 0 9EB2	DC	/9EB2	T	U
0D94 0 8692	DC	/8692	V	W
0D95 0 96A6	DC	/96A6	X	Y
0D96 0 A221	DC	/A221	Z	SP
0D97 0 FEDA	DC	/FEDA	%	&
0D98 0 DEF2	DC	/DEF2	LES	INT
0D99 0 F6D2	DC	/F6D2	□	SMI
0D9A 0 D6E6	DC	/D6E6	*	@
0D9B 0 E2C6	DC	/E2C6	QTE	LOR
0D9C 0 C2BE	DC	/C2BE	@	UDR
0D9D 0 8682	DC	/8682	QSN	CLN
0D9E 0 4642	DC	/4642	GTR	EXC
0D9F 0 0602	DC	/0602	PCT	CNT
0DA0 0 09FF	DC	/09FF	RED	
0DA1 0 FFFF	DC	/FFFF		

*
*
* LOWER CASE

0DA2 0 0001	DC	1	ITCNT
0DA3 0 2181	DC	/2181	SP CR
0DA4 0 05FF	DC	/05FF	BLACK
0DA5 0 0002	DC	2	ITCNT
0DA6 0 813C	DC	/813C	CR A
0DA7 0 181C	DC	/181C	B C
0DA8 0 3034	DC	/3034	D E
0DA9 0 1014	DC	/1014	F G
0DAA 0 2420	DC	/2420	H I
0DAB 0 7C58	DC	/7C58	J K
0DAC 0 5C70	DC	/5C70	L M
0DAD 0 7450	DC	/7450	N O
0DAE 0 5464	DC	/5464	P Q
0DAF 0 6098	DC	/6098	R S
0DB0 0 9CB0	DC	/9CB0	T U
0DB1 0 8490	DC	/8490	V W
0DB2 0 94A4	DC	/94A4	X Y
0DB3 0 A021	DC	/A021	Z SP
0DB4 0 FCD8	DC	/FCD8	1 2
0DB5 0 DCF0	DC	/DCF0	3 4
0DB6 0 F4D0	DC	/F4D0	5 6
0DB7 0 D4E4	DC	/D4E4	7 8
0DB8 0 E0C4	DC	/E0C4	9 0
0DB9 0 C08C	DC	/C08C	NOS /
0DBA 0 8480	DC	/8480	- ,
0DBB 0 4440	DC	/4440	AND \$
0DBC 0 0400	DC	/0400	AT .
0DBD 0 09FF	DC	/09FF	RED
0DBE 0 FFFF	DC	/FFFF	

*
*
*
* COLDR SHIFT

0DBF 0 0002	DC	2	ITCNT
0DC0 0 81FF	DC	/81FF	RED
0DC1 0 0014	DC	20	ITCNT
0DC2 0 0952	DC	/0952	RED D
0DC3 0 1105	DC	/1105	BSP BLK
0DC4 0 DA21	DC	/DA21	+ SP
0DC5 0 21FF	DC	/21FF	SP
0DC6 0 0038	DC	59	ITCNT
0DC7 0 11FF	DC	/11FF	BSP
0DC8 0 0014	DC	20	ITCNT
0DC9 0 0952	DC	/0952	RED D
0DCA 0 1105	DC	/1105	BSP BLK

80614980
80614990
80615000
80615010
80615020
80615030
80615040
80615050
80615060
80615070
80615080
80615090
80615100
80615110
80615120
80615130
80615140
80615150
80615160
80615170
80615180
80615190
80615200
80615210
80615220
80615230
80615240
80615250
80615260
80615270
80615280
80615290
80615300
80615310
80615320
80615330
80615340
80615350
80615360
80615370
80615380
80615390
80615400
80615410
80615420
80615430
80615440
80615450
80615460
80615470
80615480
80615490
80615500
80615510
80615520
80615530
80615540
80615550
80615560
80615570
80615580
80615590
80615600
80615610
80615620
80615630
80615640
80615650

1053/1816 FUNCTION TEST

0DCB 0 DA21	DC	/DA21	+	SP
0DCC 0 21FF	DC	/21FF	SP	
0DCD 0 0038	DC	59	ITCNT	
0DCF 0 11FF	DC	/11FF	8SP	
0DCF 0 0014	DC	20	ITCNT	
0DD0 0 0952	DC	/0952	RED D	
0DD1 0 1105	DC	/1105	BSP BLK	
0DD2 0 DA21	DC	/DA21	+	SP
0DD3 0 21FF	DC	/21FF	SP	
0DD4 0 FFFF	DC	/FFFF		

*
*
*
* BACK SPACE AND INDEX

0DD5 0 0001	DC	1	ITCNT
0DD6 0 2181	DC	/2181	SP CR
0DD7 0 05FF	DC	/05FF	BLACK
0DD8 0 0002	DC	2	ITCNT
0DD9 0 8141	DC	/8141	CR TAB
0DDA 0 3611	DC	/3611	F *
0DDB 0 111F	DC	/111E	* C
0DDC 0 1111	DC	/1111	* *
0DDD 0 3F11	DC	/3F11	A *
0DDE 0 1156	DC	/1156	* P
0DDF 0 1111	DC	/1111	* *
0DE0 0 9A11	DC	/9A11	S *
0DE1 0 1111	DC	/1111	* *
0DE2 0 5A11	DC	/5A11	K *
0DE3 0 111E	DC	/111E	* C
0DE4 0 1111	DC	/1111	* *
0DE5 0 3E11	DC	/3F11	A *
0DE6 0 111A	DC	/111A	* B
0DE7 0 8141	DC	/8141	CR TAB
0DE8 0 2211	DC	/2211	I BSP
0DE9 0 0376	DC	/0376	LNF N
0DEA 0 1103	DC	/1103	BSP LNF
0DEB 0 3203	DC	/3203	D LNF
0DEC 0 1136	DC	/1136	BSP F
0DED 0 0311	DC	/0311	LNF BSP
0DEE 0 9603	DC	/9603	X LNF
0DEF 0 1109	DC	/1109	BSP RFU
0DF0 0 81FF	DC	/81FF	CR
0DF1 0 0001	DC	1	ITCNT
0DF2 0 81FF	DC	/81FF	CR
0DF3 0 FFFF	DC	/FFFF	

*
*
* AUTOMATIC CARRIER RETURN *

0DF4 0 0001	DC	/0001	ITCNT
0DF5 0 8105	DC	/8105	SP CR
0DF6 0 1E3C	DC	/1F3C	C A
0DF7 0 6060	DC	/6060	R R
0DF8 0 2034	DC	/2034	I E
0DF9 0 6021	DC	/6021	R
0DFA 0 6034	DC	/6034	R E
0DFB 0 9CB0	DC	/9CB0	T U
0DFC 0 6074	DC	/6074	R N
0DFD 0 21FF	DC	/21FF	
0DFE 0 0078	DC	120	ITCNT
0DFF 0 21FF	DC	/21FF	SPACE
0E00 0 0001	DC	1	ITCNT
0E01 0 0921	DC	/0921	RED
0E02 0 1E3C	DC	/1E3C	C A
0E03 0 6060	DC	/6060	R R
0E04 0 2034	DC	/2034	I E
0E05 0 6021	DC	/6021	R
0E06 0 6034	DC	/6034	R E

80615660
80615670
80615680
80615690
80615700
80615710
80615720
80615730
80615740
80615750
80615760
80615770
80615780
80615790
80615800
80615810
80615820
80615830
80615840
80615850
80615860
80615870
80615880
80615890
80615900
80615910
80615920
80615930
80615940
80615950
80615960
80615970
80615980
80615990
80616000
80616010
80616020
80616030
80616040
80616050
80616060
80616070
80616080
80616090
80616100
80616110
80616120
80616130
80616140
80616150
80616160
80616170
80616180
80616190
80616200
80616210
80616220
80616230
80616240
80616250
80616260
80616270
80616280
80616290
80616300
80616310
80616320
80616330

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 13

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 13A

1053/1816 FUNCTION TEST

0E07	0	9C80	DC	/9C80	T	U
0E08	0	6074	DC	/6074	R	N
0E09	0	21FF	DC	/21FF		
0E0A	0	0078	DC	120	ITCNT	
0E0B	0	21FF	DC	/21FF	SPACE	
0E0C	0	FFFF	DC	/FFFF		
* * RDCK						
0E0D	0	0001	DC	1	ITCNT	
0E0E	0	2181	DC	/2181	SP CR	
0E0F	0	05FF	DC	/05FF	BLACK	
0E10	0	0002	DC	2	ITCNT	
0E11	0	81C0	DC	/81C0	CR NDS	
0E12	0	8040	DC	/8040	Y \$	
0E13	0	0020	DC	/0020	• I	
0E14	0	60A0	DC	/60A0	R Z	
0E15	0	E0D0	DC	/E0D0	9 6	
0E16	0	9050	DC	/9050	W D	
0E17	0	1030	DC	/1030	F D	
0E18	0	70B0	DC	/70B0	M U	
0E19	0	F0D8	DC	/F0D8	4 2	
0E1A	0	9858	DC	/9858	S K	
0E1B	0	1804	DC	/1804	B AT	
0E1C	0	4484	DC	/4484	AND -	
0E1D	0	C4E4	DC	/C4E4	O 8	
0E1E	0	A464	DC	/A464	Y Q	
0E1F	0	2414	DC	/2414	H G	
0E20	0	5494	DC	/5494	P X	
0E21	0	D4F4	DC	/D4F4	7 5	
0E22	0	B474	DC	/B474	V N	
0E23	0	341C	DC	/341C	E C	
0E24	0	5C9C	DC	/5C9C	L T	
0E25	0	DCFC	DC	/DCFC	3 1	
0E26	0	BC7C	DC	/BC7C	/ J	
0E27	0	3C21	DC	/3C21	A	
0E28	0	0242	DC	/0242	CNT ECX	
0E29	0	82C2	DC	/82C2	CLN #	
0E2A	0	E2A2	DC	/E2A2	QTE Z	
0E2B	0	6222	DC	/6222	R LDR	
0E2C	0	1252	DC	/1252	F Q	
0E2D	0	92D2	DC	/92D2	W SMI	
0E2E	0	F2B2	DC	/F2B2	I U	
0E2F	0	7232	DC	/7232	M O	
0E30	0	1A5A	DC	/1A5A	B K	
0E31	0	9ADA	DC	/9ADA	S T	
0E32	0	C686	DC	/C686	LNT QSN	
0E33	0	4606	DC	/4606	GTR PCT	
0E34	0	2666	DC	/2666	H Q	
0E35	0	A6E6	DC	/A6E6	Y @	
0E36	0	D696	DC	/D696	* X	
0E37	0	5616	DC	/5616	P G	
0E38	0	3676	DC	/3676	E N	
0E39	0	B6F6	DC	/B6F6	V □	
0E3A	0	DE9E	DC	/DE9E	LFS T	
0E3B	0	5E1E	DC	/5E1E	L C	
0E3C	0	3E7E	DC	/3E7E	A J	
0E3D	0	BEFE	DC	/BEFE	UDR %	
0E3E	0	09FF	DC	/09FF	RED	
0E3F	0	FFFF	DC	/FFFF		
* * RDLL						
0E40	0	0001	DC	1	ITCNT	
0E41	0	2181	DC	/2181	SP CR	
0E42	0	05FF	DC	/05FF	BLACK	
0E43	0	0002	DC	2	ITCNT	
0E44	0	81C0	DC	/81C0	CR NDS	
0E45	0	E0D0	DC	/E0D0	9 6	
0E46	0	F0D8	DC	/F0D8	4 2	

80616340
80616350
80616360
80616370
80616380
80616390
80616400
80616410
80616420
80616430
80616440
80616450
80616460
80616470
80616480
80616490
80616500
80616510
80616520
80616530
80616540
80616550
80616560
80616570
80616580
80616590
80616600
80616610
80616620
80616630
80616640
80616650
80616660
80616670
80616680
80616690
80616700
80616710
80616720
80616730
80616740
80616750
80616760
80616770
80616780
80616790
80616800
80616810
80616820
80616830
80616840
80616850
80616860
80616870
80616880
80616890
80616900
80616910
80616920
80616930
80616940
80616950
80616960
80616970
80616980
80616990
80617000
80617010

1053/1816 FUNCTION TEST

0E47	0	C4E4	DC	/C4E4	O	8
0E48	0	D4F4	DC	/D4F4	7	5
0E49	0	DCFC	DC	/DCFC	3	1
0E4A	0	BC9C	DC	/BC9C	/	T
0E4B	0	B494	DC	/B494	V	X
0E4C	0	A484	DC	/A484	Y	-
0E4D	0	98B0	DC	/98B0	S	U
0E4E	0	90A0	DC	/90A0	W	Z
0E4F	0	8040	DC	/8040	Y	\$
0E50	0	6050	DC	/6050	R	D
0E51	0	7058	DC	/7058	M	K
0E52	0	4464	DC	/4464	AND	Q
0E53	0	5474	DC	/5474	P	N
0E54	0	5C7C	DC	/5C7C	L	J
0E55	0	3C1C	DC	/3C1C	A	C
0E56	0	3414	DC	/3414	E	G
0E57	0	2404	DC	/2404	H	AT
0E58	0	1830	DC	/1830	B	D
0E59	0	1020	DC	/1020	F	I
0E5A	0	0021	DC	/0021	•	
0E5B	0	3E1E	DC	/3E1E	A	C
0E5C	0	3616	DC	/3616	E	G
0E5D	0	2606	DC	/2606	H	PCT
0E5E	0	1A32	DC	/1A32	B	D
0E5F	0	1222	DC	/1222	F	I
0E60	0	0242	DC	/0242	CNT	EXC
0E61	0	6252	DC	/6252	R	O
0E62	0	725A	DC	/725A	M	K
0E63	0	4666	DC	/4666	GTR	O
0E64	0	5676	DC	/5676	P	N
0E65	0	5E7E	DC	/5E7E	L	J
0E66	0	BE9E	DC	/BE9E	UDR	T
0E67	0	B696	DC	/B696	V	X
0E68	0	A686	DC	/A686	Y	QSN
0E69	0	9A82	DC	/9A82	S	U
0E6A	0	92A2	DC	/92A2	W	Z
0E6B	0	82C2	DC	/82C2	CLN	#
0E6C	0	E2D2	DC	/E2D2	QTE	SMI
0E6D	0	F2DA	DC	/F2DA	LNT	&
0E6E	0	C6E6	DC	/C6E6	LDR	@
0E6F	0	D6F6	DC	/D6F6	*	□
0E70	0	DEFE	DC	/DEFE	LES	%
0E71	0	09FF	DC	/09FF	RED	
0E72	0	FFFF	DC	/FFFF		
* * TWIST						
0E73	0	0001	DC	1	ITCNT	
0E74	0	2181	DC	/2181	SP CR	
0E75	0	05FF	DC	/05FF	BLACK	
0E76	0	0002	DC	2	ITCNT	
0E77	0	81C0	DC	/81C0	CR NDS	
0E78	0	3E80	DC	/3E80	A	Y
0E79	0	7E40	DC	/7E40	J	\$
0E7A	0	BE00	DC	/BE00	UOR	•
0E7B	0	FE20	DC	/FE20	%	I
0E7C	0	0E60	DC	/DE60	LES	R
0E7D	0	9EA0	DC	/9EA0	T	Z
0E7E	0	5EE0	DC	/5EE0	L	9
0E7F	0	1ED0	DC	/1ED0	C	6
0E80	0	3690	DC	/3690	E	W
0E81	0	7650	DC	/7650	N	D
0E82	0	B610	DC	/B610	V	F
0E83	0	F630	DC	/F630	□	O
0E84	0	D670	DC	/D670	*	M
0E85	0	96B0	DC	/96B0	X	U
0E86	0	56F0	DC	/56F0	P	4
0E87	0	16D8	DC	/16D8	G	2
0E88	0	2698	DC	/2698	H	S

80617020
80617030
80617040
80617050
80617060
80617070
80617080
80617090
80617100
80617110
80617120
80617130
80617140
80617150
80617160
80617170
80617180
80617190
80617200
80617210
80617220
80617230
80617240
80617250
80617260
80617270
80617280
80617290
80617300
80617310
80617320
80617330
80617340
80617350
80617360
80617370
80617380
80617390
80617400
80617410
80617420
80617430
80617440
80617450
80617460
80617470
80617480
80617490
80617500
80617510
80617520
80617530
80617540
80617550
80617560
80617570
80617580
80617590
80617600
80617610
80617620
80617630
80617640
80617650
80617660
80617670
80617680
80617690

1053/1816 FUNCTION TEST

0E89	0	6658	DC	/6658	Q	K
0E8A	0	A618	DC	/A618	Y	8
0E8B	0	E604	DC	/E604	Q	AT
0E8C	0	C644	DC	/C644	LOR	AND
0E8D	0	8684	DC	/8684	QSN	-
0E8E	0	46C4	DC	/46C4	GTR	0
0E8F	0	06E4	DC	/06E4	PCT	8
0E90	0	1AA4	DC	/1AA4	B	Y
0E91	0	5A64	DC	/5A64	K	Q
0E92	0	9A24	DC	/9A24	S	H
0E93	0	DA14	DC	/DA14	&	G
0E94	0	F254	DC	/F254	LNT	P
0E95	0	B294	DC	/B294	U	X
0E96	0	72D4	DC	/72D4	M	7
0E97	0	32F4	DC	/32F4	D	5
0E98	0	12B4	DC	/12B4	F	V
0E99	0	5274	DC	/5274	D	N
0E9A	0	9234	DC	/9234	W	E
0E9B	0	D21C	DC	/D21C	SMI	C
0E9C	0	E25C	DC	/E25C	QTE	L
0E9D	0	A29C	DC	/A29C	Z	T
0E9E	0	62DC	DC	/62DC	R	3
0E9F	0	22FC	DC	/22FC	I	1
0EA0	0	02BC	DC	/02BC	CNT	/
0EA1	0	427C	DC	/427C	EXC	J
0EA2	0	823C	DC	/823C	CLN	A
0EA3	0	C221	DC	/C221	#	
0EA4	0	09FF	DC	/09FF	RED	
0EA5	0	0001	DC	1	ITCNT	
0EA6	0	05FF	DC	/05FF	BLACK	
0EA7	0	FFFF	DC	/FFFF		

```
*
*          PRINTER OUTPUT STATUS
*          TABLES
*          PRINTER NO 0
```

ADDRESS	HEX	ASCII	DESCRIPTION
0EAB	0000		BSS E 0
0EA8	1 0D73	PTR0	DC TACAR WORD POINTER
0EA9	0 0002		DC 2 TEST POINTER
0EAA	0 8000		DC /8000 PTR NOT SELECTED
		*	/C000 PTR IN KEYBOARD TEST
		*	/0000 PTR SVC REQUESTED
0EAB	0 81FF		DC /81FF NEXT PTR OUTPUT WORD
0EAC	0 0001		DC 1 ITERATION CDUNT
0EAD	0 0001		DC 1 SHIFT WORD
0EAE	0 0000		DC 0 WDRDS PRINTED
0EAF	0 0000		DC 0 LAST ITCNT ADDR PT
0EB0	1 0EAB		DC PTR0&OUT
0EB1	0 0100		DC /0100 WRITE COMMAND
0EB2	0 0000	PTRON	DC 0 PRINTER
0EB3	0 0701		DC /0701 SENSE DSW COMMAND
0EB4	0 0000		DC 0
0EB5	0 0400		DC /0400 SELECT KEYBOARD CMD
0EB6	1 0EB4		DC PTR0&KEY
0EB7	0 0200		DC /0200 READ KEYBOARD COMND
0EB8	0 0000		DC /0000 ERROR DSW WAS
0EB9	0 0000		DC /0000 DSW SHOULD HAVE BEEN

```

*
*
*          PRINTER NO 1

```

OEBA 1 0D73	* PTR1	DC	TACAR	WORD POINTER
OEBC 0 0002		DC	2	TEST POINTER
OEBC 0 8000		DC	/8000	PTR NOT SELECTED
	*		/C000	PTR IN KEYBOARD TEST
	*		/0000	PTR SVC REQUESTED
OEBC 0 81FF		DC	/81FF	NEXT PTR OUTPUT WORD

I8M MAINTENANCE DIAGNOSTIC PRDGRAM FOR THE 1800 SYSTEM

1053/1816 FUNCTIDN TEST

0E8E	0	0001	DC	1	ITERATION COUNT
0EBF	0	0001	DC	1	SHIFT WORD
0EC0	0	0000	DC	0	WORDS PRINTED
0EC1	0	0000	DC	0	LAST ITCNT ADDR PT
0EC2	1	0EBD	DC	PTR1&OUT	
0EC3	0	0100	DC	/0100	WRITE COMMAND
0EC4	0	0001	DC	1	
0EC5	0	0701	DC	/0701	SENSE DSW COMMAND
0EC6	0	0000	DC	0	
0EC7	0	0400	DC	/0400	SELECT KEYBOARD CMD
0EC8	1	0EC6	DC	PTR1&KEY	
0EC9	0	0200	DC	/0200	READ KEYBOARD COMND
0ECA	0	0000	DC	/0000	ERROR DSW WAS
0EC8	0	0000	DC	/0000	DSW SHDULD HAVE BEEN

```

*
*
*          PRINTER NO 2

```

HEX	ASCII	DATA	DESCRIPTION
00EC	1 0D73	PTR2	DC
00ED	0 0002		DC
00EE	0 8000		DC
		*	
		*	
00CF	0 81FF		DC
00D0	0 0001		DC
00D1	0 0001		DC
00D2	0 0000		DC
00D3	0 0000		DC
00D4	1 0ECF		DC
00D5	0 0100		DC
00D6	0 0002		DC
00D7	0 0701		DC
00D8	0 0000		DC
00D9	0 0400		DC
00DA	1 0ED8		DC
00DB	0 0200		DC
00DC	0 0000		DC
00DD	0 0000		DC
			TACAR
			2
			/8000
			/C000
			/0000
			/81FF
			1
			1
			0
			0
			PTR2&OUT
			/0100
			2
			/0701
			0
			/0400
			PTR2&KEY
			/0200
			/0000
			/0000

```

*
*
*          PRINTER NO 3

```

CODE	DATA	OPERATION	DESCRIPTION
00DE	1 0073	PTR3	WORD POINTER
00DF	0 0002	DC	TEST POINTER
00E0	0 8000	DC	PTR NOT SELECTED
		*	PTR IN KEYBOARD TEST
		*	PTR SVC REQUESTED
00E1	0 81FF	DC	NEXT PTR OUTPUT WORD
00E2	0 0001	DC	ITERATION COUNT
00E3	0 0001	DC	SHIFT WORD
00E4	0 0000	DC	WORDS PRINTED
00E5	0 0000	DC	LAST ITCNT ADDR PT
00E6	1 00E1	DC	PTR3&OUT
00E7	0 0100	DC	WRITE COMMAND
00E8	0 0003	DC	
00E9	0 0701	DC	SENSE DSW COMMAND
00EA	0 0000	DC	
00EB	0 0400	DC	SELECT KEYBOARD CMD
00EC	1 00EA	DC	PTR3&KEY
00ED	0 0200	DC	READ KEYBOARD COMND
00EE	0 0000	DC	ERROR DSW WAS
00EF	0 0000	DC	DSW SHOULD HAVE BEEN

```

*
*
*          PRINTER NO. 4

```

OEFO	1	OD73				
OEFl	0	0002	PTR4	DC	TACAR	WORD POINTER
				DC	2	TEST POINTER

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 15

1053/1816 FUNCTION TEST

0EF2 0 8000	DC	/8000	PTR NOT SELECTED	80619060
	*	/C000	PTR IN KEYBOARD TEST	80619070
	*	/0000	PTR SVC REQUESTED	80619080
0EF3 0 81FF	DC	/81FF	NEXT PTR OUTPUT WORD	80619090
0EF4 0 0001	DC	1	ITERATION COUNT	80619100
0EF5 0 0001	DC	1	SHIFT WORD	80619110
0EF6 0 0000	DC	0	WORDS PRINTED	80619120
0EF7 0 0000	DC	0	LAST ITCNT ADDR PT	80619130
0EF8 1 0EF3	DC	PTR4&3		80619140
0EF9 0 0100	DC	/0100	WRITE COMMAND	80619150
0EFA 0 0004	DC	4		80619160
0EFB 0 0701	DC	/0701	SENSE DSW COMMAND	80619170
0EFC 0 0000	DC	0		80619180
0EFD 0 0400	DC	/0400	SELECT KEYBOARD CMD	80619190
0EFE 1 0EFC	DC	PTR4&KEY		80619200
0EFF 0 0200	DC	/0200	READ KEYBOARD CMDND	80619210
0F00 0 0000	DC	/0000	ERROR DSW WAS	80619220
0F01 0 0000	DC	/0000	DSW SHOULD HAVE BEEN	80619230
	*			80619240
	*			80619250
	*		PRINTER NO 5	80619260
	*			80619270
0F02 1 0D73	PTR5 DC	TACAR	WORD POINTER	80619280
0F03 0 0002	DC	2	TEST POINTER	80619290
0F04 0 8000	DC	/8000	PTR NOT SELECTED	80619300
	*	/C000	PTR IN KEYBOARD TEST	80619310
	*	/0000	PTR SVC REQUESTED	80619320
0F05 0 81FF	DC	/81FF	NEXT PTR OUTPUT WORD	80619330
0F06 0 0001	DC	1	ITERATION COUNT	80619340
0F07 0 0001	DC	1	SHIFT WORD	80619350
0F08 0 0000	DC	0	WORDS PRINTED	80619360
0F09 0 0000	DC	0	LAST ITCNT ADDR PT	80619370
0F0A 1 0F05	DC	PTR5&OUT		80619380
0F0B 0 0100	DC	/0100	WRITE COMMAND	80619390
0F0C 0 0005	DC	5		80619400
0F0D 0 0701	DC	/0701	SENSE DSW COMMAND	80619410
0F0E 0 0000	DC	0		80619420
0F0F 0 0400	DC	/0400	SELECT KEYBOARD CMD	80619430
0F10 1 0F0E	DC	PTR5&KEY		80619440
0F11 0 0200	DC	/0200	READ KEYBOARD CMDND	80619450
0F12 0 0000	DC	/0000	ERROR DSW WAS	80619460
0F13 0 0000	DC	/0000	DSW SHOULD HAVE BEEN	80619470
	*			80619480
	*			80619490
	*		PRINTER NO 6	80619500
	*			80619510
0F14 1 0D73	PTR6 DC	TACAR	WORD POINTER	80619520
0F15 0 0002	DC	2	TEST POINTER	80619530
0F16 0 8000	DC	/8000	PTR NOT SELECTED	80619540
	*	/C000	PTR IN KEYBOARD TEST	80619550
	*	/0000	PTR SVC REQUESTED	80619560
0F17 0 81FF	DC	/81FF	NEXT PTR OUTPUT WORD	80619570
0F18 0 0001	DC	1	ITERATION COUNT	80619580
0F19 0 0001	DC	1	SHIFT WORD	80619590
0F1A 0 0000	DC	0	WORDS PRINTED	80619600
0F1B 0 0000	DC	0	LAST ITCNT ADDR PT	80619610
0F1C 1 0F17	DC	PTR6&OUT		80619620
0F1D 0 0100	DC	/0100	WRITE COMMAND	80619630
0F1E 0 0006	DC	6		80619640
0F1F 0 0701	DC	/0701	SENSE DSW COMMAND	80619650
0F20 0 0000	DC	0		80619660
0F21 0 0400	DC	/0400	SELECT KEYBOARD CMD	80619670
0F22 1 0F20	DC	PTR6&KEY		80619680
0F23 0 0200	DC	/0200	READ KEYBOARD CMDND	80619690
0F24 0 0000	DC	/0000	ERROR DSW WAS	80619700
0F25 0 0000	DC	/0000	DSW SHOULD HAVE BEEN	80619710
	*			80619720
	*			80619730

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 15A

1053/1816 FUNCTION TEST

	*			80619740
	*		PRINTER NO 7	80619750
	*			80619760
0F26 1 0073	PTR7 OC	TACAR	WORD POINTER	80619770
0F27 0 0002	OC	2	TEST POINTER	80619780
0F28 0 8000	OC	/8000	PTR NOT SELECTED	80619790
	*	/C000	PTR IN KEYBOARD TEST	80619800
	*	/0000	PTR SVC REQUESTED	80619810
0F29 0 81FF	OC	/81FF	NEXT PTR OUTPUT WORD	80619820
0F2A 0 0001	DC	1	ITERATION COUNT	80619830
0F2B 0 0001	OC	1	SHIFT WORD	80619840
0F2C 0 0000	DC	0	WORDS PRINTED	80619850
0F2D 0 0000	DC	0	LAST ITCNT ADDR PT	80619860
0F2E 1 0F29	DC	PTR7&OUT		80619870
0F2F 0 0100	DC	/0100	WRITE COMMAND	80619880
0F30 0 0007	DC	7		80619890
0F31 0 0701	DC	/0701	SENSE DSW COMMAND	80619900
0F32 0 0000	DC	0		80619910
0F33 0 0400	OC	/0400	SELECT KEYBOARD CMD	80619920
0F34 1 0F32	DC	PTR7&KEY		80619930
0F35 0 0200	DC	/0200	READ KEYBOARD CMDND	80619940
0F36 0 0000	DC	/0000	ERROR DSW WAS	80619950
0F37 0 0000	DC	/0000	DSW SHOULD HAVE BEEN	80619960
	*			80619970
	*			80619980
0F38 1 0D73	PTR8 DC	TACAR	WORD POINTER	80619990
0F39 0 0002	DC	2	TEST POINTER	80620000
0F3A 0 8000	DC	/8000	PTR NOT SELECTED	80620010
	*	/C000	PTR IN KEYBOARD TEST	80620020
	*	/0000	PTR SVC REQUESTED	80620030
0F3B 0 81FF	OC	/81FF	NEXT PTR OUTPUT WORD	80620040
0F3C 0 0001	OC	1	ITERATION COUNT	80620050
0F3D 0 0001	DC	1	SHIFT WORD	80620060
0F3E 0 0000	DC	0	WORDS PRINTED	80620070
0F3F 0 0000	DC	0	LAST ITCNT ADDR PT	80620080
0F40 1 0F3B	DC	PTR8&OUT		80620090
0F41 0 0100	DC	/0100	WRITE COMMAND	80620100
0F42 0 0007	DC	7		80620110
0F43 0 0701	DC	/0701	SENSE DSW COMMAND	80620120
0F44 0 0000	OC	0		80620130
0F45 0 0400	DC	/0400	SELECT KEYBOARD CMD	80620140
0F46 1 0F44	DC	PTR8&KEY		80620150
0F47 0 0200	DC	/0200	READ KEYBOARD CMD	80620160
0F48 0 0000	OC	/0000	ERROR DSW WAS	80620170
0F49 0 0000	OC	/0000	DSW SHOULD HAVE BEEN	80620180
	*			80620190
	*			80620200
0F4A 0 0000	DC	0		80620210
0FFD 0 0000	ORG	/7FE&PID		80620220
0FFD 0 0000	PEND OC	0		80620230
0FFE 08FA	ENO	TYCUS		80620240

NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY

1053/1816 FUNCTIDN TEST

ADR 0000 0AB7 0CCE
ADRS 0A5C 0A5A
AGAIN 091F 0807 091B 094C
AGAN1 0926 0924
AGAN2 092C 0931
AGAN4 093A 092E
AGAN5 0932 0929 0937
AGAN6 0938 0934
AGAN8 093E 0925
ALL 0807 0AE7
ANY 0C96 08DA 0BE0 0BE2 0C00 0C04 0C0B 0C10 0C19 0C1B 0C1F 0C22 0C26 0CBB
AUCAR 0DF4 0C91
AWAIT 0CB5 0CB5
BASIC 0B06 08C4 08E0 09EA 0A70 0AE4 0C40
BEGIN 012C 0BFB
BSPSE 0BC9 0C0D
BSYER 0B3A 0BF3
BSYOK 0B40 0B39
BUILD 099A 09AB
CKDSX 0C7C 0C61
CKERR 09F4 09E6 09F1
CKHAV 09F3 09ED
CKREL 0A16 09F3 0A19 0A2B 0A4E
CKRXT 0A27 0A1F 0A20 0A21
CLEND 0EA5
CMPRE 0BCD 0BAB
CNVRT 0BA5 0BAB
COLOR 0DBF 0CBF
COMIL 087D 088E 08EB
COMIN 0B70 0B25 0B2E 0B37 0B40 0B49 0B52 0B5B 0B64 0B6D 0B77
CDMIX 0877 0B85 0887 08BB 08BC 08CB 08E3 0BE7 0BF3
COMI1 08B4 0B7A
COMI2 08B7 08B3
COMI4 08E8 08BB
CXREL 0C56 0C51
DDEFS 094E 0976
DDEFX 081B 0904 0CE9
DDEF0 0811 0902 092C 0938 093A 094E 0967 0A17 0A1D 0A55 0C56 0C5C 0C6B 0C72
DDEF1 0812 094F
DDEF2 0813 0950
DDEF3 0814 0951
DDEF4 0815 0952
DDEF5 0816 0953
DDEF6 0817 0954
DDEF7 0818 0955
DDEF8 0819 0956
DETLB 08A8 0895
DETC1 0BA2 0897
DETE 088C 0886 0B9B 0BA0 0AF7 0B37
DETG 0894 0B9A
DETR 089B 0891 0BA6
DETS 0BAB 088E 0B9F
DETX 089D 088D 0B94 0BA7
DSWAS 0B44 0B54 0B62
DSWBS 0B46 0B69 0B6D
DSWBY 0B42 0B35 0B3A 0BEF
DSWCS 0B4B 0927 0B89 0BBA 0B8D
DVAS 0957 097C 099A 09A0 09A5 09DC
DVA0 0B1D 0957 0A56 0C73
DVA1 0B28 0958
DVA2 0B31 0959
DVA3 0B3A 095A
DVA4 0B43 095B
DVA5 0B4C 095C
DVA6 0B55 095D
DVA7 0B5E 095E

1053/1B16 FUNCTIDN TEST

DVA8 0B67 095F
ELVEN 0A30 0A72 0C42
EMESG 0CB2 0BBA 0BBE 0C31 0C32 0C33 0C35 0C3A 0C60
END 012E 0CBA
ENDM 0C10 0BB2
ENDM1 0C10 0C17
ENDM2 0C25 0C14
ENBM3 0C27 0C24
EPA 0B08
ERBUY 0C76 0C71
ERDLY 0C4B 0C45
ERDDD 0C66 0C63 0C76
ERDSW 0C5E 0C5B 0C7C
ERGET 0C6F
ERIND 09E2 0889 09F4 0B0A
ERLDP 0C63 0C62
ERR 0010 0888 0B0F 0B17 0B1E
ERRDR 0130 0C5E
ERSE 0BF7 0BB6
ERSEA 0BCB 0BF7 0BFB
ERSE1 0C07 0BFD
ERSE2 0C0D 0C06
ERSLC 0BC5 0BB4
EXEC 0A00 0A3D 0A4A 0A5B 0B01
EXECA 0A5B 0A48
EXEC0 0A39 0A0B 0A10 0A36
EXEC1 0A02 0A40 0A46 0A4D
EXEC2 0A04 0A3B
EXEC3 0A42 0A06
EXEC5 0A14 0A11
EXEC6 0A44 0A13 0A15 0A38
EXEC7 0A67 0A54 0B72
EXECB 0A5B
EXEC9 0A6A 0A41
EXIT 0BE6 0BDC
FSTSW 0BF7 0BFA 0BFF 090B
FUND 0C95 0AB0 0B07 0C21 0C25
FUNR 0CBB 0AA9 0AAE 0AB4 0B07 0CCC
FOC00 0B43
FO200 0B47 0ABE 0B6A 0C4B
GO 0BFE 0B06 091D 09BF
GO1 090C 0900
HALT 0133
I 0A6C 0A7B 0A7A 0A85 0AB7 0ABA 0AC1 0AC8 0AD4 0AD9
II 08F6 0B7C 0A0E 0CC9
INERR 0B09 09F5
INER0 0B0C 0B1F
INER1 0B0F 0B14
INER2 0B17 0B11
INTSW 0B1C 0B20 0A4F 0C6C
ITR 0004 0AAB 0AD3 0AD5 0ADE 0C03
KA000 0BF5 0BBD 0BCD
KBDDL 0BAE 0BC1
KBDRQ 0BBF 0BB5
KBDRR 0BCD 0BC8
KC000 0961 0BEC
KECDD 0CF3 0BA5 0CB3
KEY 000C 0911 09A4 0B67 0B7E 0BB3 0BB6 0B95 0B9B 0BA7 0BAC 0BB1 0BB5 0BBB
KEYBD 0B74 0A64
KEYCR 0BCC 0B7F 0B94 0B97 0B9C
KEYER 0BB6 0BB4 0BF2
KEYIN 0B93 0BBB
KEYPT 0B7E 0B77
KE000 0C89 0BB9 0BE6 0C34 0C4D
KFC00 0A2E 0A42
KFFE7 0BC7 0BF9
KFFFF 0B04 0ADF 0AEA

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 17

1053/1816 FUNCTION TEST

KFF00 0B03 0AD0
KFF80 09B6 0942 0972
KF000 0BCB 08E8 0B60
KF800 0A2D 0A08
K0C00 0B05 0AFF 0B36 0BF1
K0008 0BCA 08B0 0C27
K0100 09B3 099C
K0200 09B5 09A7
K0400 08AC 0890 09A2
K0701 09B4 099E
K4000 08F4 08EE 08F0
K8000 0960 0872 087E 0881 090F 093C 09C9 0A90 0B4A
LCASE 0DA2 0C8E
LOG 012F
LOWER 0BC3 0BC1 0BCF 0B05
MARK 0A6E 0B40
MARKA 0A88 0A8C
MARKB 0A8B 0A80
MARKG 0ABC 0A5F 0A74 0ACB 0B5E
MARKK 0AE2 0C2E
MARKL 0ABE 0A5D 0AA7
MARKN 0ACF 0AC6
MARKP 0A9D 0A9A
MARKQ 0A9B 0A99
MARKR 0A92 0A8D 0A94
MARKS 0AC7 0AC3
MARKX 0AEF 0A6A 0A8A 0AD1 0BF5
MARK2 0A8D 0AB2
MARK3 0AA5 0AE5 0AE8 0AEE
MARK4 0AA9
MARK5 0AAE 0AD6 0AEO
MLSCF 0B09 091B 094A 09AF 0A23 0AF1 0B29 0B5A 0C7E
NCAP 0BC4 0BAD
NEXT 0A62 0A60
NOCP 0BC1 0BAE
NOIN 0B4A 0A65
NOS 0006 0AB9 0AC7 0AC9 0AD8 0ADA 0CD6
NOSFT 0BD9
ONLIN 0B0F 08BF 0922 0B80
OUT 0003 0A7C 0A89 0ACF 0BD3 0C0E 0CD1 0EB0 0EC2 0ED4 0EE6 0F0A 0F1C 0F2E
OUTWD 0A6D 0A7B 0A7E 0A8B
PAD 0007 0AAD 0AB6 0ADB 0ADC 0CD7
PDSWX 0C7E 0A9B 0C4F 0C65 0C6A 0C75 0C78 0C7B 0CB9
PEND 0FFD 080B
PID 07FF 0BFD
PRCON 09E3 0801 09DB 0AEF 0B15 0B51 0B56 0B6B
PRDSW 0C30 0AFB 0B19 0B3C 0B4F 0B70 0B7A 0B8F 0B9E 0BBC 0C66
PRSEL 09B9 0916 09CC 09FD 0AA0
PTR 000A 0B74 0B76 0B8A 099F 0AF6 0B34 0B4D 0B53 0B68 0B76 0B88 0BEA 0BEE
PTRAD 0C88 0AFD 0B1B 0B3E 0B7C 0B91 0BA0 0C36
PTR0 0EA8 0B23 0BA8 09E3 0A34 0A58 0A68 0C4B 0EB0 0EB6
PTR01 0B1E 0B26
PTR0N 0EB2
PTR1 0EBA 0B2C 0BA9 0EC2 0EC8
PTR11 0B29 0B2F
PTR2 0ECC 0B35 0ED4 0EDA
PTR21 0B32 0B38
PTR3 0EDE 0B3E 0EE6 0EEC
PTR31 0B3B 0B41
PTR4 0EF0 0B47 0EF8 0EFE
PTR41 0B44 0B4A
PTR5 0F02 0B50 0BAD 0F0A 0F10
PTR51 0B4D 0B53
PTR6 0F14 0B59 0F1C 0F22
PTR61 0B56 0B5C
PTR7 0F26 0B62 0F2E 0F34

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 17A

1053/1816 FUNCTION TEST

PTR71 0B5F 0B65
PTR8 0F38 0B6B 090C 0997 09C2 0A02 0A3E 0A4B 0B0C 0CC6 0F40 0F46
PTR81 0B68 0B6E
P16EF 0B1A 0B21 0B2A 0B33 0B3C 0B45 0B4E 0B57 0B60 0B69 0BA2 0970 0973 09FF
READY 0AF5 0A62
RED1 0B83 0C1D
RELCK 0C4B 0C79
RELDV 0132 0A1B 0C5A 0CDB
REQDV 0131 0981 0A52 0C6F
RESET 0910 0915
RESTO 0A66 0A05 0A67
RID 0B00 0C3C 0C46
ROCK 0E0D 0C92
ROLL 0E40 0C93
RQST 0962 0919
RQSTC 0981 0975 09AD
RQSTT 0996 096D
RQST1 0967 096C
RQST2 0976 0969
RQST3 096B 0980
RQST5 09AD 0983
RQST6 0997 0984 0985 0986 0987 0988 0989 098A 098B 098C 098D 098E 098F 0990
0991 0992 0993 0994 0995
RQST8 0984 0964
RQST9 09AF
RSADR 0AA3 0B0C 0C2A 0CC4
RTN 0001 0B02 0AA6 0C3B 0CCB
RYOER 0AFA 0BEB
SEE 000E 0BCE 09A8 0B74 0B85 0B93
SELC 0B67 0B63
SELC1 0B70 0B66 0B6F
SELC2 0B53 0A63 0BC0 0BC2 0BFA
SELC3 0B5E 0B58
SELT 09BA 0948 09AC 09FB
SELT7 09C7 09CE
SFT 0BDD 0B08
SLT 0005 0ABB 0AC0 0AC2 0CD4
SLTWD 0BC6 0B07 0B06 0BE4 0BFC 0C16
SPNDX 0DD5 0C90
START 0120 09B1 0A25 0AF3 0B2C 0B5C 0C80
STS 0002 0A71 0B7D 0B8B 0BCE 0BED 0910 09C8 09CF 09E3 0A04 0A34 0A44 0A68
0A96 0A9F 0B00 0B61 0BE8 0C28 0C4B
SVC 0A34 0A31 0A32
SVCAD 0A31 0A09
SWCMP 09B7 0946 09F9
SWSTG 0BF8 0908 0CED
SWO 0B02 0B20
SW1 0B03 0B80 0B2C 0BDE 0BE5 09E8 0A6E 0AE2 0C2C 0C3E 0CRE
SW2 0B04 0906 0920 093E 0944 09BA 09C4 09F7 0CEF
SW3 0B05 0A75 0A81
TACAR 0D73 0C8C 0CCF 0EA8 0EBA 0ECC 0EDE 0EFO 0F02 0F14 0F26 0F38
TBLI 0BE4 0C0E
TBLIS 0BE2 0BDB
TBLIZ 0BE0 0BDF
TDLY2 0B27 0B32
TDLY4 0B2E 0B27 0B2B
TDLY6 0B33 0B22
TEMP 09B8 09D2 09D3 09D5
TEMPX 0BF9 0BAE 0BB2
TEND 0CBC 0B08 0CF1
TEND1 0CC9 0CDA
TEND2 0CE9 0CDD 0CDE 0CDF 0CE0 0CE1 0CE2 0CE3 0CE4 0CE5 0CE6 0CE7
TEND3 0CDD 0962
TERM 0B0A 0996 0A1E 0A57 0C5D 0C74 0CE8
TIMEB 0B0B 0B24
TIMEX 0C8A 0A90 0A97 0B25 0B30 0C4A 0C53 0CB4 0CB7
TIME1 0C79 0C55
TIME 0B79 0B75

IBM MAINTENANCE DIAGNOSTIC PRDGRAM FOR THE 1800 SYSTEM

PART NO. 2196366
PAGE 18

1053/1816 FUNCTIDN TEST

TWIST	0E73	0C94			
TWLVE	0A2F	08C6	08D0	09EC	
TYCDD	0D33	0BCD			
TYCUS	08FA	0FFE			
TYEND	0CB3	09BD	09FE		
TYPIT	0B20	0AF9			
UCASE	0D85	0C8D			
WHCH	09D1	09C7	09E0		
WHCH1	09D8	09CA	09D0	09DE	
WHCH2	09D3	09DA			
WHCH4	09DC	09D7			
WRDCT	0BA2	08D4	0B9A	0BE5	0C12
WRT	0008	099D	0833	0BED	
XX	0944	093D	0940		
END DF	ASSEMBLY				

- LAST PAGE

DATE	28FEB66	01MAY66	27JUN66	01OCT67	17JUN68	14NOV69	20MAR70	PROG ID	0806-1
EC NO.	415120	415120A	415178A	411875	411939	431319	431320	PAGE	18

TABLE OF CONTENTS

PARAGRAPH	PAGE
1. PURPOSE.	01
2. PREREQUISITES.	01
3. USE PROCEDURE	01
3.1 PROGRAM LOADING	
3.2 PROGRAM OPERATION	
3.3 SPECIAL CRC CHECK OPTION	
3.4 PROGRAM HALTS	
3.5 PROGRAM TERMINATION	
4. PRINTOUTS.	2A
4.1 COMMAND MESSAGES	
4.2 DATA MESSAGE	
4.3 ERROR PRINTOUTS	
5. COMMENTS	04
5.1 PROGRAM DESCRIPTION	
5.2 TEST ROUTINES	
5.3 COMMON SUBROUTINES	
6. APPENDIX	06
6.1 EDIT PROCEDURE	
1. PURPOSE	
MAGNETIC TAPE FUNCTION TEST (MTFNT) IS DESIGNED TO TEST EACH FUNCTION OF THE 2400 MAGNETIC TAPE SERIES FOR COMPLIANCE WITH THE PRODUCT SPECIFICATIONS.	
THE MTFNT PROGRAM IS WRITTEN TO ACCOMMODATE SYSTEMS WITH-	
1 - ONE OR TWO TAPE DRIVES.	
2 - DRIVES WITH 9 TRACK OR 7 TRACK READ-WRITE HEADS. IN SYSTEMS WITH TWO TAPE DRIVES, THE DRIVES CAN BE EXERCISED IN AN ASYNCHRONOUS FASHION. BECAUSE MTFNT RUNS UNDER CONTROL OF DIAGNOSTIC MONITOR, INTERACTION BETWEEN MAGNETIC TAPE DRIVES AND OTHER DEVICES CAN ALSO BE TESTED.	
2. PREREQUISITES	
THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 2,047 STORAGE WORDS.	
3. USE PROCEDURE	
3.1 PROGRAM LOADING	
STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.	
ON 2400 TAPE DRIVE,	
1. LOAD REEL OF TAPE	
2. DEPRESS LOAD-REWIND KEY	
3. DEPRESS START KEY	
TAPE SHOULD REWIND TO LOAD POINT, AND READY LAMP SHOULD GO ON.	
3.2 PROGRAM OPERATION	

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE CM USE PROCEDURE FOR DETAILS OF PARTS 1-4 BELOW.

1. CLEAR STORAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS
5. SELECT PROGRAM OPTIONS FROM,

IF NO OPTIONS ARE SELECTED, THE PROGRAM WILL AUTOMATICALLY RUN ALL ROUTINES IN SEQUENCE. THIS RUN WILL BE ON BOTH DRIVES UNLESS THE EDIT CARD INDICATES THERE IS NO DRIVE 1 AVAILABLE.

NOTE

IN THIS MODE NO ROUTINE WILL CHECK THE ABILITY TO SENSE END OF TAPE MARKER, UNLESS THE E.O.T. MARKER IS LESS THAN 500 RECORDS FROM LOAD POINT.

TABLE 0 PROGRAM CONTROL FUNCTION
TABLE 1 ROUTINE SELECT FUNCTION (ONLY IF LOOP ROUTINE IS DESIRED)
TABLE 2 DEVICE SELECT FUNCTION

6. INSTRUCT MONITOR TO EXECUTE

3.3 SPECIAL CRC CHECK OPTION

A SPECIAL OPTION IS AVAILABLE TO SPEED CHECKING OF THE CRC CIRCUITRY. TO USE THIS OPTION.

- A. ENTER BITS 7 (CHECK CRC), AND 10 (PRINT ONLY FIRST BAD DATA WORD) FROM TABLE 0.
- B. SELECT ROUTINE 3 FOR THE DRIVE OR DRIVES TO BE RUN. (TABLE 1)
- C. ON SYSTEMS WITH TWO DRIVES, IF IT IS ONLY DESIRED TO RUN ONE DRIVE, DESELECT THE DRIVE NOT TO BE RUN. (TABLE 2)
- D. INSTRUCT MONITOR TO EXECUTE.
- E. WAIT UNTIL THE FIRST PASS THRU TAPE IS COMPLETE. THIS IS THE WRITE PASS.
- F. DURING READING, GROUND THE OUTPUT OF THE HI CLIP AMPLIFIER FOR ONE TRACK.
- G. CHECK FOR THE FOLLOWING PRINTOUTS ON EACH RECORD READ WHILE THE HI CLIP AMPLIFIER OUTPUT IS GROUNDED.
 1. CORRECTABLE READ ERROR (A004)
 2. WRONG DATA (E007)
 3. RECOVERED READ ERROR (A003)
- H. THE OCCURANCE OF THE 'RECOVERED READ ERROR' PRINTOUT SHOWS THE CRC CIRCUIT IS WORKING CORRECTLY.
- I. REPEAT STEPS E THRU H FOR EACH TRACK.
- J. TERMINATE THE PROGRAM BY INSTRUCTING THE MONITOR TO DEEXECUTE.

TABLE 0 CONTROL FUNCTION

*****	1. SET FUNCTION CC IN SENSE/PROGRAM SWITCHES 0 AND 1.
• SENSE/PROGRAM •	(AS SHOWN)
• C 1 2 3 4 5 6 7 •	2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
• C C C C C 1 1 1 •	(AS SHOWN)
• C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
• C C C C C 1 1 1 •	4. PRESS CONSOLE INTERRUPT.
• C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	*****
• C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	DATA ENTRY SWITCHES • DESCRIPTION
• C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •	1..TERMINATE PROGRAM . THIS OPTION IS

..... USED IN BOOTSTRAP MODE. (SEE SEC. 3.5)
..... 1..... BYPASS ALL PRINTOUTS WITH A PREFIX OF
..... A OR C.
..... 1..... PRINT ONLY FIRST BAD DATA WORD.
..... 1..... RTNS 2 THRU 6 RUN TO EOT.
..... 1..... CRC CHECK OPTION (SEE SECTION 3.3)

TABLE 1 ROUTINE SELECTION

.....	1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1. (AS SHOWN)
SENSE/PROGRAM	2. SET PID IN SENSE/PROGRAM SWITCHES 2-7. (AS SHOWN)
C 1 2 3 4 5 6 7	3. SET DESIRED ROUTINES IN DATA ENTRY SWS.
C 1 C C C 1 1 1	4. PRESS CONSOLE INTERRUPT.
.....	5. A STARTING ROUTINE CAN BE SELECTED BY -- A. ENTER STARTING ROUTINE FOR A DRIVE OR DRIVES. B. START PROGRAM RUNNING. C. ENTER ROUTINE C FOR THE DRIVE OR DRIVES.
.....
DATA ENTRY SWITCHES	DESCRIPTION
C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	.....
X X X X X	..... ROUTINE TO BE LOOPEO ON DRIVE ZERO. ENTER HEX NUMBER FROM 0 TO 11.
.....
Y Y Y Y Y	..... ROUTINE TO BE LOOPEO ON DRIVE ONE. ENTER HEX NUMBER FROM 0 TO 11.
.....
NOTE 1-IF THE NUMBER ENTERED FOR A DRIVE IS ZERO-THAT DRIVE WILL NOT LOOP BUT WILL RUN ALL ROUTINES IN SEQUENCE.	.....
NOTE 2 THESE SWITCHES CAN BE CHANGED AT ANY TIME.	.....

TABLE 2 DEVICE SELECTION

.....	1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1. (AS SHOWN)
SENSE/PROGRAM	2. SET PID IN SENSE/PROGRAM SWITCHES 2-7. (AS SHOWN)
C 1 2 3 4 5 6 7	3. SET DESIRED DRIVES IN DATA ENTRY SWS.
1 C C C C 1 1 1	4. PRESS CONSOLE INTERRUPT.
.....
DATA ENTRY SWITCHES	DESCRIPTION
C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	.....
1	..... DO NOT RUN DRIVE ONE. (SEE NOTE 1)
1	..... DO NOT RUN DRIVE ZERO.
NOTE 1-DRIVE SELECTION ENTRY IS REQUIRED ONLY IF IT IS NOT DESIRED TO RUN BOTH DRIVES.	.....
NOTE 2-ONCE THE MONITOR BEGINS EXECUTION OF MTFNT DRIVE SELECTION CAN ONLY BE CHANGED BY RESTARTING MTFNT.	.....
NOTE 3-IF THE SYSTEM HAS ONLY ONE DRIVE, A SPECIAL ENTRY OF 'FFFF' IS MADE ON THE CDIT CARD FOR DRIVE 1 AND THIS OPTION IS NOT USED.	.....

3.4 PROGRAM HALTS

CATE 28FEB65 04NOV66
EC NO. 415120 415233

PROG ID 0807--
PAGE 2

THIS PROGRAM WILL NEVER WAIT, UNLESS THE DIAGNOSTIC MONITOR OPTION
OF HALT ON ERROR IS SELECTED. SEE DM USE PROCEDURE FOR THIS HALT.

3.5 PROGRAM TERMINATION

PROGRAM IS TERMINATED IF A SELECTED DRIVE IS NOT READY. PROGRAM CAN
BE MANUALLY TERMINATED IN TWO WAYS.

1. BY THE MONITOR DEEXECUTE OPTION. THIS OPTION SHOULD BE USED WHEN
RUNNING PROGRAMS IN THE OVERLAP MODE.
2. BY ENTERING BIT 15 OF FUNCTION CO (TABLE O). THIS OPTION MUST BE
USED WHEN RUNNING PROGRAMS IN THE BOOTSTRAP MODE.

4. PRINTOUTS

4.1 COMMAND MESSAGES

C7CC CCCC (THE REST OF THE WORDS HAVE NO SIGNIFICANCE)
DRIVE C IS SELECTED TO BE RUN BUT IS NOT READY.

C7CC CCC1 (THE REST OF THE WORDS HAVE NO SIGNIFICANCE)
DRIVE 1 IS SELECTED TO BE RUN BUT IS NOT READY.

C7CC CCC2 (THE REST OF THE WORDS HAVE NO SIGNIFICANCE)
NO DRIVE IS SELECTED TO BE RUN.

4.2 DATA MESSAGE

FIRST LINE

A B C C E F G H I J
C7CC CC01 CC11 XXXX CCCX XXXX XXXX XXXX XXXX XXXX

SECOND LINE

K L M N O
CCCX XXXX XXXX XXXX XXXX

PROGRAM HAS COMPLETED ONE PASS, ON THE DRIVE INDICATED.

- | | |
|----------------------------|---|
| A. MESSAGE NUMBER | I. TOTAL NUMBER OF ERASES |
| B. ROUTINE NUMBER | J. TOTAL NUMBER OF PASSES THRU TAPE |
| C. RTN ACRS | K. UNIT NUMBER |
| D. UNIT NUMBER | L. NUMBER OF RECOVERED READ ERRORS |
| E. NUMBER OF PROG PASSES | M. NUMBER OF RECOVERED WRITE ERRORS |
| F. TOTAL NUMBER OF WRITES | N. NUMBER OF UNRECOVERABLE READ ERRORS |
| G. TOTAL NUMBER OF READS | O. NUMBER OF UNRECOVERABLE WRITE ERRORS |
| H. TOTAL NUMBER OF REMINDS | |

4.3 ERROR PRINTOUTS

ALL PRINTOUTS PREFIXED 'A' CAN BE BYPASSED BY SWITCH 13 OF FNC. 00.

RTN RTN UNIT REC ERR
NC. ADDR NC. NO. CTRL
C7CC ACC1 XXXX XXXX CCCX XXXX YYRR
RECOVERED WRITE ERROR.
* ERROR CONTROL IS THE NUMBER OF RETRYS ON THIS RECORD PRIOR TO
RECOVERY. NUMBER OF RETRYS IS EQUAL TO YY MULTIPLIED BY TEN,
PLUS RR.

DSW
RECEIVED
C7CC AC02 XXXX XXXX CCCX XXXX XXXX
DSW SHOWS CORRECTABLE WRITE ERROR.

ERROR
CONTROL
C7CC AC03 XXXX XXXX CCCX XXXX YYRR
RECOVERED READ ERROR.

CATE 28FEB66 04NOV65
EC NO. 415120 415233

PROG ID 0807--
PAGE 2A

* ERROR CONTROL IS THE NUMBER OF RETRYs ON THIS RECORD PRIOR TO RECOVERY. NUMBER OF RETRYs IS EQUAL TO YY MULTIPLIED BY TEN, PLUS RR.

CSW
RECEIVED
C7CC ACC4 XXXX XXXX CCCX XXXX XXXX
DSW SHOWS CORRECTABLE READ ERROR.

ERRCR
CONTROL
C7CO ACC5 XXXX XXXX CCCX XXXX XXXX
TRIED TO BACKSPACE PAST CLEANER, BUT REACHED LOAD POINT. ERROR CONTROL IS THE TOTAL NUMBER OF TIMES THE PROGRAM TRIED TO BACKSPACE PAST THE TAPE CLEANER. (ON THIS RECORD)

EXPEC-REC.
TED NC.
REC. REAC
NC.
C700 ACC6 XXXX XXXX CCCX XXXX XXXX
RECORD ID SHOWS WRONG RECORD READ

NOTE
PRINTOUTS PREFEXED BY 'E' CAN BE BYPASSED ONLY THROUGH THE DIAGNOSTIC MONITOR 'BYPASS ERROR PRINT' SWITCH OPTION.

RTN RTN UNIT
NC. ADDR NC.
C7CC EC01 XXXX XXXX CCCX
DOUBLE INTERRUPT OCCURRED. (REFER TO ERRCR NOTE)

FNC
AND
MCD
C7CC ECC2 XXXX XXXX CCCX XXXX
FUNCTION CR MODIFIER WAS ILLEGAL. (REFER TO ERROR NOTE)

REC. DSW
NO.
C7CO EC03 XXXX XXXX CCCX XXXX XXXX
DSW SHOWS UNCORRECTABLE WRITE ERROR. (REFER TO ERRCR NOTE)

REC. DSW
NO.
C7CO ECC4 XXXX XXXX CCCX XXXX XXXX
DSW SHOWS UNCORRECTABLE READ ERROR, 100 TRIES ON A CORRECTABLE READ ERROR OR WRONG RECCRD READ HAVE FAILED. (REFER TO ERROR NOTE)

C7CC ECC5 XXXX XXXX CCCX
THE TAPE DRIVE WAS NOT AVAILABLE FOR TOO LONG A PERIOD, THE PROGRAM IS LOOPING. (REFER TO ERROR NOTE)

LAST
FNC +
MOD
C7CC ECC6 XXXX XXXX CCCX XXXX
LOST INTERRUPT (REFER TO ERROR NOTE)

REC. WD.EXPEC-RECEIVED
NO. NC. TED DATA
DATA
C7CC ECC7 XXXX XXXX CCCX XXXX XXXX XXXX XXXX
DATA READ DID NOT COMPARE WITH DATA WRITTEN.

NOTE

SINCE THE FIRST WORD OF DATA ON ALL RECORDS IS A RECORD

CATE 28FEB66 04NOV66
EC NO. 415120 415233

PROG ID 0807--
PAGE 3

I.C., THE FIRST DATA WORD CHECKED BY THE COMPARE ROUTINE IS WORD 2. REFERENCE PRINTOUT AC06 FOR RECORD I.D. PRINTOUT.

REC. DSW
NO.
C7CO ECC8 XXXX XXXX CCCX XXXX XXXX
NO END OF TABLE INTERRUPT WHEN CHAINING.

REC. DSW
NO.
C7CO EC09 XXXX XXXX CCCX XXXX XXXX
NO END OF OPERATION INTERRUPT AFTER END OF TABLE INTERRUPT WHEN CHAINING.

REC. DSW
NO.
C7CC ECCA XXXX XXXX CCCX XXXX XXXX
NO COMMAND REJECT INTERRUPT WHEN EXPECTED.

REC. DSW
NO.
C7CC ECCB XXXX XXXX CCCX XXXX XXXX
WRONG LENGTH RECORD DID NOT OCCUR AS EXPECTED.

REC. DSW
NO.
C7CO ECCC XXXX XXXX CCCX XXXX XXXX
STORAGE PROTECT VIOLATION DID NOT OCCUR WHEN EXPECTED.

REC. WD.EXPEC- WD.
NO. CT. TED FOUND
WC.
C7CO EC0D XXXX XXXX CCCX XXXX XXXX XXXX XXXX
STORAGE PROTECTED WD. WAS DESTROYED BY READ.

C7CO ECCE XXXX XXXX CCCX
PROGRAM STOP DID NOT OCCUR.

REC. DSW
NO.
C7CC ECCF XXXX XXXX CCCX XXXX XXXX
WRONG LENGTH RECORD DID NOT OCCUR.

EXPEC- WD.
TED CT.
WD. RECEIVED
CT.
C7CO EC1C XXXX XXXX CCCX XXXX XXXX
WORD COUNT SENSED WAS NOT AS EXPECTED.

REC. DSW
NO.
C7CC EC11 XXXX XXXX CCCX XXXX XXXX
READING TAPE MARK DID NOT SET DSW BIT.

EXPEC-RECEIVED
TED T.M.
T.M. DATA
DATA
C7CC EC12 XXXX XXXX CCCX XXXX XXXX
READING TAPE MARK BROUGHT IN INCORRECT DATA.

REC. DSW
NO.
C7CC EC13 XXXX XXXX CCCX XXXX XXXX
COULD NOT CHANGE DENSITY ON 7 TRACK DRIVE.

REC. DSW
CATE 28FEB66 04NOV66
EC NO. 415120 415233

PROG ID 0807--
PAGE 3A

NC.
C70G EC14 XXXX XXXX CCCX XXXX XXXX
NO LEGAL BIT ON AT INTERRUPT. (REFER TO ERROR NOTE)

EXPEC- WD.
TED CT.
WD. RECEIVED
CT.
C7CC EC15 XXXX XXXX CCCX XXXX XXXX
UNABLE TO LOAD WORD COUNTER PROPERLY.

***** ERROR NOTE *****

THESE ERROR PRINTOUTS WILL CAUSE THE PROGRAM TO TERMINATE
THE ROUTINE THAT CAUSED THE ERROR AND START THE NEXT
SEQUENTIAL ROUTINE, UNLESS RUNNING IN THE LOOP ROUTINE MODE.

5. COMMENTS

ON ANY READ OPERATION PERFORMED BY THIS PROGRAM, THE POSSIBILITY EXISTS OF
BAD PARITY COMING FROM THE TAPE, DUE TO BIT PICKUP OR DROPOUT WITHIN THE
CHANNEL ITSELF. IF THIS OCCURS, THE WORD WILL ENTER MEMORY WITH BAD PARITY.
THIS ERROR WILL NOT BE DISCOVERED UNTIL SOME TIME LATER, WHEN THE WORD IS
BROUGHT OUT OF MEMORY FOR COMPARISON WITH DATA EXPECTED. AT THIS TIME AN
INTERNAL ERROR INTERRUPT WILL OCCUR, BUT AN INDICATOR WILL BE SET TO BYPASS
THE ERROR WAIT IN THE DIAGNOSTIC MONITOR. THE ONLY INDICATION OF THIS
TROUBLE WILL BE A PRINTOUT OF INCORRECT DATA WITH NO PRECEDING RECOVERABLE
READ PRINTOUT. THIS POSSIBILITY SHOULD BE KEPT IN MIND WHEN EXAMINATION
OF PRINTOUTS IS MADE.

THIS PROGRAM WRITES, AS THE FIRST WORD OF DATA ON ALL RECORDS, A RECORD I.D.
WHEN A RECORD IS READ THE RECORD I.D. IS CHECKED AGAINST EXPECTED. IF THESE
ARE NOT THE SAME PRINTOUT A006 WILL OCCUR. THE REMAINING DATA WORDS ARE THEN
CHECKED AND IF NOT AS EXPECTED THE PRINTOUT E007 WILL OCCUR. IT SHOULD BE
REALIZED THEREFORE THAT RECORD I.D. IS CONSIDERED BY THE PROGRAM TO BE DATA
WORD 1 AND THE REMAINING DATA IS WORDS 2 THROUGH THE NUMBER OF WORDS USED BY
THE ROUTINE.

NOTE

WHEN THE RECORD I.D. IS FOUND TO BE IN ERROR, THE EXPECTED
I.D. IS SET EQUAL TO THE RECEIVED I.D. IN AN EFFORT TO
SYNC THE PROGRAM TO THE ACTUAL RECORD NUMBER IT IS AT ON
THE TAPE. THIS WILL ALLOW RECOVERY AND CONTINUATION OF THE
PROGRAM EVEN IF RECORDS ARE INTERMITTENTLY SKIPPED DUE TO
HARDWARE TROUBLE.

5.1 PROGRAM DESCRIPTION

THE MAGNETIC TAPE FUNCTION TEST CONSISTS OF A MAGNETIC TAPE MONITOR
ROUTINE, A SERIES OF COMMON MAGNETIC TAPE SUBROUTINES AND A SERIES OF
INDIVIDUAL TESTS.

THERE ARE FIVE IMPORTANT TABLES AROUND WHICH ALL ROUTINES ARE
ORIENTED.

DST 0 AND DST 1 - MAGNETIC TAPE DEVICE STATUS TABLE.
ONE FOR EACH TAPE DRIVE.
COMMON - CONTAINS COMMON CONSTANTS AND COMMON ROUTINE CALLS.
DRTB AND DRTB - CONTAINS 'CONSTANTS' AND 'RETURNS' UNIQUE
TO EACH DRIVE.

5.2 TEST ROUTINES

EEC HEX
RTN = RTN = DESCRIPTION

DATE 28FEB66 04NOV66
EC NO. 415120 415233

PRCG ID 0807-
PAGE 4

1 1 INITIAL CONDITIONS CHECK
1. REWIND
2. CHECK FOR LOAD POINT
3. CHECK FOR READY.

2 2 WRITE-BACKSPACE-READ 500 RECORDS OR TO END OF TAPE USING 20 WORDS
PER RECORD AND ALL ONES PATTERN.

WRITE-READ TESTS. STARTING AT LOAD POINT WRITE 500 RECORDS OR TO
ECT, REWIND, READ ALL RECORDS WRITTEN AND CHECK DATA.

ROUTINES 3 THROUGH 6 HAVE THEIR RECORD ID AS THE FIRST WORD OF
EACH RECORD.

3 3 20 WORDS PER RECORD USING FLOATING ZERO PATTERN.
4 4 20 WORDS PER RECORD USING FLOATING ONES PATTERN.
5 5 08 WORDS PER RECORD USING ALL ZEROS PATTERN.
6 6 08 WORDS PER RECORD USING ALTERNATE ONES PATTERN.

SPECIAL TESTS

7 7 WRITE USING CHAINING, READ BACK AND CHECK DATA.
8 8 CAUSE COMMAND REJECT BY ISSUING A COMMAND TO A BUSY DRIVE.
9 9 CAUSE COMMAND REJECT BY ISSUING A COMMAND TO THE UNSELECTED
DRIVE.
10 A CAUSE COMMAND REJECT BY BACKSPACING INTO LOAD POINT.
11 B CAUSE COMMAND REJECT BY REWINDING WHEN AT LOAD POINT.
12 C FORCE SPV STOP BY READING INTO STORAGE PROTECTED LOCATIONS.
ALSO CHECK FOR WRONG LENGTH RECORD.
13 C FORCE PROGRAM STOP BY ISSUING A SENSE WITH BIT 12 TO A
MOVING DRIVE. ALSO CHECK WRONG LENGTH RECORD, AND PROPER
WORD COUNTER LOADING.
14 E FORCE WRONG LENGTH RECORD BY READING MORE WORDS THAN WERE
WRITTEN. CHECK THAT WORD COUNT WAS PROPERLY LOADED AND STEPPED.
15 F WRITE AND READ A TAPE MARK. CHECK BOTH DATA AND SENSE WORD.
16 1C 7 TRACK FEATURE TESTS

THE FIRST WORD OF EACH RECORD IS THE RECORD ID AND DOES NOT
CONTAIN THE PATTERN WORD.

1. WRITE ONE RECORD OF 20 WORDS AT 556 BPI, 2 BYTES PER
WORD AND ODD PARITY. BACKSPACE, READ THE RECORD AND
CHECK THE DATA.
2. WRITE ONE RECORD OF 20 WORDS AT 556 BPI, 2 BYTES PER
WORD AND EVEN PARITY. BACKSPACE, READ THE RECORD AND
CHECK THE DATA.
3. WRITE ONE RECORD OF 20 WORDS AT 556 BPI, 3 BYTES PER
WORD AND ODD PARITY. BACKSPACE, READ THE RECORD AND
CHECK THE DATA.
4. WRITE ONE RECORD OF 20 WORDS AT 556 BPI, 3 BYTES PER
WORD AND EVEN PARITY. BACKSPACE, READ THE RECORD AND
CHECK THE DATA.
5. BACKSPACE AND READ AT 200 BPI, 3 BYTES PER WORD AND EVEN
PARITY. CHECK THE DSW FOR TAPE DATA ERROR, OR COMPLETE,
TAPE DIAGNOSTIC ERROR AND WRONG LENGTH RECORD.
6. WRITE ONE RECORD OF 20 WORDS AT 200 BPI, 3 BYTES PER
WORD AND EVEN PARITY. BACKSPACE, READ THE RECORD AND
CHECK THE DATA.

17 11 FORCE WRONG LENGTH RECORD BY READING FEWER WORDS THAN WERE
WRITTEN. CHECK FOR PROPER LOADING AND STEPPING OF THE WORD
COUNTER.

5.3 COMMON SUBROUTINES

EACH SUBROUTINE ASSUMES THAT INDEX REGISTER 1 CONTAINS THE BASE ADDRESS
OF THE DRTABLE, INDEX REGISTER 2 CONTAINS THE BASE ADDRESS OF THE
PROPER DST TABLE, AND XRB THE BASE ADDRESS OF THE COMMON TABLE.

DATE 28FEB66 04NOV66
EC NO. 415120 415233

PRCG ID 0807-
PAGE 4A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TESTPART NO. 2196372
PAGE 5

NAME CALL

ESP BSI 3 14
USE- BACKSPACE ONE TAPE RECORD

CKAVL BSI 3 41
USE- CHECKS THE DRIVE AVAILABLE SWITCH FOR BOTH DRIVES. IF EITHER SWITCH IS EQUAL TO ONE THE ROUTINE LOOPS THROUGH THE DIAGNOSTIC MONITOR. THE ROUTINE RETURNS TO THE CALLING ROUTINE WHEN BOTH DRIVE AVAILABLE SWITCHES ARE EQUAL TO ZERO.

CKBSY BSI 3 38
USE- CHECKS THE DRIVE BUSY SWITCH FOR BOTH DRIVES. IF EITHER SWITCH IS EQUAL TO ONE THE ROUTINE LOOPS THRU THE MONITOR. THE ROUTINE COUNTS EACH MONITOR REENTRY AND IF THE COUNT EXCEEDS A MAXIMUM, LOST INTERRUPT IS PRINTED. THE ROUTINE RETURNS TO THE CALLING ROUTINE WHEN BOTH SWITCHES ARE EQUAL TO ZERO.

CCMCC BSI 3 5C
USE- A COMMON SET UP ROUTINE WHICH-
1. BRANCHES TO CKBSY ROUTINE.
2. SETS THE DRIVE BUSY SWITCH TO ONE.
3. BRANCHES TO CKAVL ROUTINE.
4. SETS THE DRIVE AVAIL. SWITCH TO ONE.
5. SETS THE HEXADECIMAL CONSTANT OF 4014 AS THE WORD COUNT IN THE I/O AREA.
6. SETS THE DECIMAL CONSTANT OF 20 AS THE WORD COUNT IN DST TABLE POSITION 15.
7. SETS THE AREA CODE AND DRIVE SELECTION CONSTANT FOR THE INTERRUPT ROUTINES USE.
E. RETURNS TO THE CALLING ROUTINE.

CCM01 BSI 3 53
USE- A COMMON SET UP ROUTINE WHICH-
1. BRANCHES TO CKAVL ROUTINE.
2. SETS DRIVE AVAIL. SW. TO ONE
3. SETS THE HEXADECIMAL CONSTANT OF 4014 AS THE WORD COUNT IN THE I/O AREA.
4. SETS THE DECIMAL CONSTANT OF 20 AS THE WORD COUNT IN DST TABLE POSITION 15.
5. SETS THE AREA CODE AND DRIVE SELECTION CONSTANT FOR USE BY THE INTERRUPT ROUTINE.
6. RETURNS TO THE CALLING ROUTINE.

CCM03 BSI 3 73
DESIRED FUNCTION AND MODIFIER MUST BE IN THE A REG.
USE- A COMMON SET UP ROUTINE WHICH-
1. STORES FUNCTION AND MODIFIER IN THE DST TABLE AT POSITIONS 2 AND 3.
2. BUILDS THE ICCO CONTROL WORD.
3. GETS THE WORD COUNT FROM DST TABLE POSITION 15, ADDS A NO END OF TABLE INTERRUPT BIT AND SETS IT IN THE I/O AREA.
4. SETS THE RECORD COUNT FROM DST TABLE POSITION 10 AS THE FIRST DATA WORD IN THE I/O AREA.
5. SETS THE DRIVE BUSY SWITCH TO ONE.
6. SETS THE AREA CODE AND DRIVE SELECTION CONSTANT FOR USE BY THE INTERRUPT ROUTINE.
7. ISSUES THE COMMAND TO THE TAPE DRIVE.
8. EXITS TO THE DIAGNOSTIC MONITOR.

CSW BSI 3 32
USE- SENSES DSW AND PLACES DSW INTO THE ACCUMULATOR

ERA BSI 3 29
USE- TAPE ERASE

EXIT BSI 3 76
CLEARS DRIVE AVAILABLE SWITCH AND RETURNS TO MT MON.

DATE 28FEB66 04NOV66
FC NO. 415120 415233PROG ID 0807-
PAGE 5IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TESTPART NO. 2196372
PAGE 5A

MER BSI 3 11
CC MESSAGE ID
CC LINE = AND FORM =
USE- SETS UP TABLE TO BE PRINTED AND CALLS ON MONITOR ERROR ROUTINE.

MLC BSI 3 C8
CC MESSAGE ID
CC LINE = AND FORM =
USE- SETS UP TABLE TO BE PRINTED AND CALLS ON MONITOR LOG ROUTINE.

MRCD BSI 3 44
USE- THIS ROUTINE OBTAINS THE PATTERN WORD FROM THE PROPER DST TABLE TO BE COMPARED WITH THE DATA READ. THE STARTING LOCATION IS SPECIFIED BY THE I/C ADDRESS OBTAINED FROM THE DST TABLE. THE ROUTINE CONTINUES UNTIL THE NUMBER OF WORDS SPECIFIED IN THE DST WORD COUNT HAVE BEEN COMPARED. IF A NONCOMPARE IS FOUND, THE ERROR ROUTINE (MER) IS ENTERED.

MRSC BSI 3 47
CC PATTERN WORD
USE- SET THE CORE LOCATIONS IN THE I/C AREA TO THE PATTERN SPECIFIED BY THE CALLING SEQUENCE.

MTI INTERRUPT ROUTINE
USE- SENSES THE DSW, FINDS I/C ROUTINE THAT INITIATED I/C OPERATION AND SETS UP TO RETURN TO THE OPERATION COMPLETE SECTION OF THE SELECTED I/C ROUTINE. ALSO SENSES AND SAVES THE WORD COUNTER AND CLEARS DRIVE BUSY SWITCH.

RCT BSI 3 20
CC FORMAT (C-2)

C = FLOATING ZEROS
1 = FLOATING ONES
2 = ALL ONES, ALL ZEROS OR ALTERNATING ONES
USE- READ MAGNETIC TAPE ROUTINE. NUMBER OF WORDS TO BE READ AND LOCATION OF INPUT AREA ARE TAKEN FROM THE DST TABLE. AFTER READ IS COMPLETE, THE RTN ENTERS RTN PROD TO CHECK DATA READ.

RWC BSI 3 17
USE- REWINDS THE UNIT SPECIFIED BY INDEX REGISTER 1.

STAC BSI 3 5C
USE- SETS OR SELECTION FOR USE BY THE INTERRUPT ROUTINE.

STPST BSI 3 35
CC ENTRY TO SET
USE- PASSES CONTROL TO THE LOCATION SPECIFIED IN THE CALLING SEQUENCE. THE PASSING OF CONTROL IS DONE BY WAY OF THE DIAGNOSTIC MONITOR'S MLCSEF TABLE. THE ROUTINE USES A PUSH UP ENTRY TECHNIQUE.

WRTH BSI 3 23
USE- WRITES A TAPE RECORD. THE LOCATION OF THE OUTPUT AREA AND NUMBER OF WORDS TO BE WRITTEN ARE TAKEN FROM THE PROPER DST TABLE.

WTM BSI 3 26
USE- A TAPE MARK IS WRITTEN ON THE UNIT SPECIFIED BY INDEX REGISTER 1.

DATE 28FEB66 04NOV66
FC NO. 415120 415233PROG ID 0807-
PAGE 5A

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES:

1. AN "E" IN COLUMN 1.
2. THE PID FOR THIS PROGRAM (COL. 2-3).
3. A TERMINATOR WORD OF "FFFF" (COL. 7-10).

[illegible]

CARD 0 MUST CONTAIN THE FULL 3 ENTRIES. IF YOUR SYSTEM HAS ONLY ONE DRIVE, ENTER "FFFF" FOR DRIVE ONE AND THE CORRECT ENTRY FOR DRIVE 0.

CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.

NOTE: ONLY TWO DRIVES MAY BE RUN AT A TIME WITH THIS PROGRAM.

```
07FF      ORG      *E2047
*
*
*          EQUATE TABLES
*
012C 0     BEGIN EQU      300
012D 0     START EQU     BEGIN&1
012E 0     END EQU       START&1
012F 0     LOG EQU        END&1
0130 0     ERROR EQU     LOG&1
0131 0     REQDV EQU     ERROR&1
0132 0     RELDV EQU     REQDV&1
0133 0     CKCR EQU      RELDV&1
D7FF 0 0700  PID DC       /0700      PROG ID
0800 0 0000  RID DC       0          ROUTINE NUMBER
0801 0 0000  RAD DC       0          ROUTINE ADRS
08D2 0 00D0  SWO DC       0          SW FNC 00
0803 0 0000  SW1 DC       0          01
0804 0 0000  SW2 DC       0          10
0805 0 0000  SW3 DC       0          11
0806 1 08AC  IPA DC       MTRST      INIT ADRS
0807 1 08AC  LPA DC       MTRST      LOOP ADRS
0808 1 08CD  EPA DC       MTEND      ENO PROG ADRS
0809 0 0000  MLSCF DC      0          LOST INT VEC
080A 0 0000  DC         0          INTERRUPT ENTRY ONLY
0808 0 0000  DC         0          INTERRUPT ENTRY ONLY
080C 0 0000  DC         0          MAIN LINE ENTRY ONLY
080D 0 00D0  DC         0          MAIN LINE ENTRY ONLY
080E 0 FFFF  TERM DC      /FFFF      HIGH LIMIT
080F 1 0FFA  DC         PEND
081D 0 00D0  DC         0
D811 0 0000  DC         0
0812 0 0D00  DC         0
D813 0 0000  DC         0
0814 0 0000  DC         0
0815 D 0000  EDIT DC      0          INTR LVL, ILSW, CH
0816 D 0000  EDIT1 DC     0          NUMBER TRACKS DR 0
0817 0 0D0D  EDIT2 DC     0          NUMBER TRACKS DR 1
*
*
*          THIS IS THE INTERRUPT RTN
*
*
*
0818 0 0000  INTSW DC      0          NTRPT PENDING SW
0819 0 0D00  MTIO DC      0          AREA CODE STDRAGE
081A 0 0000  MTI DC       0
081B 0 693F  STX 1 MTIS&1  SAVE INDEX REGS
081C D 6A40  STX 2 MTIS&3
D81D 1 6500 0909 LDX L1 DR1TB  SET IXING = DR 1
081F 1 6600 0956 LDX L2 DST1  *
0821 0 1010  SLA 16        CLEAR A REG
0822 0 D0F5  STO          RESET NTRPT SW
0823 0 C05C  LD           BUILD SENSE DSX
0824 1 F4DD 08CC  EOR L ACMT
0826 0 D05A  STO          SAVE
0827 0 0858  XIO          SENSE-NON RESETABLE
0828 0 C058  LD           MTDSW&1
0829 0 F124  EOR 1 36
082A 0 D056  STO          MTDSW&1
0828 0 0854  XIO          SENSE-RESETABLE
082C 0 D04C  STO          SAVE
082D 1 C400 08CC  LD L ACMT  GET DR SELECTION
082F 0 1805  SRA 5
0830 1 4C04 0836 BSC L MTIC,E  BRANCH = DR 0
0832 1 6500 08D6 LDX L1 DROT8  SET IXING TO DR 0
0834 1 6600 0939 LDX L2 DSTO
```

```
80700020
80700030
80700040
80700050
80700060
80700070
80700080
80700090
80700100
80700110
80700120
80700130
80700140
80700150
80700160
80700170
80700180
80700190
80700200
80700210
80700220
80700230
80700240
80700250
80700260
80700270
80700280
80700290
80700300
80700310
80700320
80700330
80700340
80700350
80700360
80700370
80700380
80700390
80700400
80700410
80700420
80700430
80700440
80700450
80700460
80700470
80700480
80700490
80700500
80700510
80700520
80700530
80700540
80700550
80700560
80700570
80700580
80700590
80700600
80700610
80700620
80700630
80700640
80700650
80700660
80700670
80700680
80700690
```

```
0836 0 C042
0837 0 D208
0838 0 E041
0839 1 4C18 0873
```

```
083B 0 C045
083C 0 F042
083D 0 D043
083E 0 0841
083F 0 D205
```

```
0840 0 C202
0841 0 1005
0842 0 1800
0843 0 D00A
0844 0 9124
0845 0 4818
0846 0 7019
0847 1 9400 0975
0849 0 4818
084A 0 701F
084B 0 1010
084C 0 D202
```

```
084D 0 6700 0000
084F 1 C700 0882
0851 0 D003
0852 1 6700 0974
```

```
0854 0 4357
0855 0 0000
0856 0 1010
0857 0 D21A
0858 0 D073
0859 0 D0AF
085A 0 6500 0000
085C 0 6600 0000
085E 1 4C80 081A
```

```
0860 1 C400 09C4
0862 0 D202
0863 0 C015
0864 0 D219
0865 0 1009
0866 1 4C28 0840
0868 0 D0AF
0869 0 70F0
```

```
086A 0 D202
086B 0 C203
086C 0 E00E
086D 0 D001
086E 0 6700 0000
0870 1 C700 088A
0872 0 70DE
```

```
MTIC LD      MTIX1      GET SENSE WD
      STO 2 8          SET IN DST
      AND      MTIX2      CK FOR LEGAL INT
      BSC L MTIAC,&-    BRANCH IF ILLEGAL
```

```
*
*          SENSE WD CTR
*
MTIAD LD      MTDSW&1
      EOR      SWC
      STO      MTDSW&1
      XIO      MTDSW      ISSUE SENSE
      STO 2 5          SAVE WD CT
```

```
*
*          DETERMINE MLSCF ENTRY
*
MTIT LD 2 2          GET FUNCTION
      SLA 5
      SRA 13
      STO      MTIC1&1  SAVE
      S 1 36          SUB ONE
      BSC &-          WAS FNC # 1
      MDX      SPRT1     YES
      S L MTTWO&1      SUB 3
      BSC &-          WAS FNC 4
      MDX      MTICL     YES
      SLA 16          CLEAR FNC
      STO 2 2
```

```
*
*          SET MLSCF ENTRY
*
MTIC1 LDX L3 0          IX 3 # FNC
      LD L3 FNCTB      GET ENTRY
MTIR1 STO MTIR          SAVE
      LDX L3 MTTWO      IX3#ADRS COMMON TBL
*
      BSI 3 87          GO SET MLSCF ENTRY SRC
MTIR DC 0
      SLA 16
      STO 2 26          SET IN DR BUSY SW
      STO ACMT          CLEAR DR SEL
      STO MLSCF         CLEAR LOST INT VEC
MTIS LDX L1 0          RESTORE IX REGS
      LDX L2 0
      BSC I MTI          EXIT IX
```

```
*
*          FUNCTION WAS DNE
*
SPRT1 LD L SPFNC&1      GET 0200
      STO 2 2          SET FNC # 2
      LD MTIX1          GET SENSE WORD
      STO 2 25          SET IN DST
      SLA 9             CHECK OP COMPLETE
      BSC L MTIT,Z&
      STO INTSW
      MDX      MTIS
```

```
*
*          FUNCTION FOUR ENTRY
*
MTICL STO 2 2          CLEAR FNC
      LD 2 3          GET MODIFIER
      AND      MTIX3
      STO      MTIE1&1  SAVE
MTIE1 LDX L3 0          IX 3 # MOD
      LD L3 FNCCl      GET ENTRY
      MDX      MTIR1
```

```
*
*          HAD AN ILLEGAL INTRRUPT
*
```

```
80700700
80700710
80700720
80700730
80700740
80700750
80700760
80700770
80700780
80700790
80700800
80700810
80700820
80700830
80700840
80700850
80700860
80700870
80700880
80700890
80700900
80700910
80700920
80700930
80700940
80700950
80700960
80700970
80700980
80700990
80701000
80701010
80701020
80701030
80701040
80701050
80701060
80701070
80701080
80701090
80701100
80701110
80701120
80701130
80701140
80701150
80701160
80701170
80701180
80701190
80701200
80701210
80701220
80701230
80701240
80701250
80701260
80701270
80701280
80701290
80701300
80701310
80701320
80701330
80701340
80701350
80701360
80701370
```


2400 FUNCTION TEST

```
0873 0 C008 MTIAC LO MTIX4 GET ENTRY 80701380
0874 0 70DC MOX MTIR1 80701390
* 80701400
* RETURN TO PRINT DN ILLEGAL 80701410
* INTERRUPT 80701420
* 80701430
MTIAE BSI 3 11 GO TO PRINT VIA MER SRC 80701440
DC /E014 ID 14 80701450
DC /0002 LINE 0 - FORM 2 80701460
MOX DBIN1 GO TO RTN EXIT 80701470
* 80701480
* 80701490
* 80701500
* 80701510
MTIX1 OC 0 SENSE WD STDRAGE 80701520
MTIX2 DC /3040 LEGAL INT CK 80701530
MTIX3 OC /0007 MODIFIER SAVE 80701540
MTIX4 OC MTIAE 80701550
BSS E 0 80701560
SELSW DC 0 80701570
SWC OC /0011 SENSE WD CTR MDO 80701580
MTDSW OC /0700 SENSE IDCC 80701590
DC 0 80701600
* 80701610
* FUNCTION TRANSFER VECTORS 80701620
* 80701630
FNCTB DC DBINT 000 # DBL INTRPT 80701640
DC SPRT1 001 # EXPECT 2 INTR 80701650
DC SPINT 010 # SPECIAL RETURN 80701660
DC MTIER 011 # ERROR 80701670
DC MTIER 100 # ERROR 80701680
DC WRTI 101 # INIT WRT 80701690
OC RDTI2 110 # INIT RD 80701700
OC MTIER 111 # ERROR 80701710
* 80701720
* MODIFIER TRANSFER VECTORS 80701730
* 80701740
FNCCL DC MTIER 000 # ERROR 80701750
DC WTAB 001 # WRT TP MRK 80701760
DC ERAB 010 # ERASE 80701770
OC BSPI2 011 # BSP 80701780
DC RWDIR 100 # REWINO 80701790
DC MTIER 101 # ERROR 80701800
OC MTIER 110 # ERROR 80701810
DC MTIER 111 # ERROR 80701820
* 80701830
* HAD A DOUBLE INTERRUPT 80701840
* 80701850
DBINT BSI 3 11 GO TO PRINT VIA MER SRC 80701860
DC /E001 ID 01 80701870
OC /0009 LINE 0 FORM 9 80701880
MDX DBIN1 GO TO RTN EXIT 80701890
* 80701900
* FUNCTION OR MODIFIER WRONG 80701910
* 80701920
MTIER BSI 3 11 GO TO PRINT VIA MER SRC 80701930
DC /E002 ID 02 80701940
OC /0009 LINE 0 FORM 9 80701950
OBIN1 BSI 3 76 GO TO RTN EXIT 80701960
* 80701970
* SPECIAL RTN RUNNING 80701980
* 80701990
SPINT LD 2 28 GET RTN NUMBER 80702000
A TAG02 ADD TABLE ADDRESS LESS 7 80702010
STD SPIAB+1 PLACE IN BRANCH INSTR. 80702020
* 80702030
* 80702040
* 80702050
BSI 1 46 SET IX 3 SRC
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 2

2400 FUNCTION TEST

```
089E 0 4C80 0000 SPIAB BSC I *-* GD TD RETURN 80702060
* 80702070
* TABLE 80702080
* 80702090
TAG02 DC *-7 TABLE ADDRESS LESS 7 80702100
SPITB DC F07IR ROUTINE 7 80702110
DC F08IR 8 80702120
DC F08IR 9 80702130
DC MTIER 10 80702140
DC F08IR 11 80702150
DC F0EIR 12 80702160
DC F0FIR 13 80702170
DC F10IR 14 80702180
DC MTIER 15 80702190
DC F12IR 16 80702200
OC F10IR 17 80702210
* *** ** 80702220
* 80702230
* INITIALIZATION ROUTINE 80702240
* 80702250
* *** ** 80702260
MTRST DC 0 SE 80702270
SLA 16 CLEAR DST TABLES 80702280
LDX 3 58 80702290
MON00 STO L3 DST0-1 80702300
MDX 3 -1 80702310
MDX MON00 80702320
* 80702330
* SET NECESSARY DST VALUES 80702340
* 80702350
LDX I3 EDIT1 IX3 # NO TRACKS/DR 0 80702360
STX L3 DST0 SET NO TRACKS/DR 0 80702370
LD L3 MONXC EXPECTED TM DATA 80702380
STO DROT8&29 SET FOR OR 0 80702390
LDX I3 EDIT2 IX3 # NO TRACKS/DR 1 80702400
STX L3 DST1 SET NO TRACKS/ DR 1 80702410
LO L3 MONXC EXPECTED TM DATA 80702420
STO DRIT8&29 SET FOR DR 1 80702430
SLA 16 ZERO ACCUM 80702440
STO SELSW CLEAR SEL SW 80702450
STO ACMT CLEAR DR SEL 80702460
LDX L1 MON03 SET RETURN 80702470
STX L1 MLSCF 80702480
BSC I MTRST EXIT SX 80702490
MONXC DC /1300 9 TRACK TM 80702500
OC /3C00 7 TRACK TM 80702510
ACMT OC 0 AREA CODE 80702520
* *** ** 80702530
* 80702540
* END PROGRAM ROUTINE 80702550
* 80702560
* *** ** 80702570
MTENO OC 0 SE 80702580
BSI L SETX4 SET IXING SRC 80702590
* 80702600
* 80702610
BSI 3 81 GO RELEASE OEVICE SRC 80702620
BSC I MTEND SX 80702630
* *** ** 80702640
* 80702650
* CALL ON MONITOR FOR EDIT 80702660
* 80702670
* *** ** 80702680
***** 80702690
MTBEG BSI I BEGIN * 80702700
OC PIO * 80702710
***** 80702720
* *** ** 80702730
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 2A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196370
PAGE 3

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196370
PAGE 3A

2400 FUNCTION TEST

2400 FUNCTION TEST

```
*
*          DRIVE 0 TABLE OF CONSTANTS
*          AND RETURNS
*
* *** ***/
08D6 D FF00      DROT8 DC /FF00      DRO LDDP RTN SAVE 0
08D7 0 0D00      DC 0              WRT RTN RETURN 1
08D8 0 0000      DC 0              ERA RTN RETURN 2
08D9 0 0402      DC /0402          ERA MDD & FNC 3
08DA 0 0000      DC 0              WR TM RTN RETURN 4
08DB 0 0401      DC /0401          WR TM FNC & MDD 5
08DC 0 0000      DC 0              READ RTN RETURN 6
08DD 0 0000      DC 0              READ RETRY SW 7
08DE 0 0000      DC 0              BSP RTN RETURN 8
08DF 0 0408      DC /0408          BSP FNC & MDD 9
08E0 0 0000      DC 0              RWD RTN RETURN 10
08E1 0 0404      DC /0404          RWD FNC & MDD 11
08E2 0 0000      DC 0              SENSE RTN RETURN 12
08E3 0 0700      DC /0700          SENSE FNC & MDD 13
08E4 0 0000      DC 0              STAC RTN RETURN 14
08E5 0 0000      DC 0              SET MLSCF STDRAGE 15
08E6 1 08CF      DC SETX0          SET MLSCF ENTRY 16
08E7 0 0000      DC 0              SET INT RETURN 17
08E8 1 08E2      DC SETI0          SET INT ENTRY 18
08E9 0 0000      DC 0              CK8SY RETURN 19
08EA 0 0000      DC 0              CKAVL RETURN 20
08EB 0 0000      DC 0              LDG/ERRDR SW 21
08EC 1 0D52      DC MERX0          DR 0 MSG ADRS 22
08ED 0 0000      DC 0              MER/MLG RETURN 23
08EE 0 0000      DC 0              RTN 3/4 SW 24
08EF 0 0000      DC 0              RTN 5/6 SW 25
08F0 0 0000      DC 0              SET UP 1 RETURN 26
08F1 0 0720      DC /0720          RTN 9 MDD & FNC 27
08F2 0 0708      DC /0708          PRDG STDP MDD&FNC 28
08F3 0 0000      DC 0              EXPECTED TM DATA 29
08F4 0 0510      DC /0510          WRT-556,2,DDD 30
08F5 0 0610      DC /0610          RD-556,2,DDD 31
08F6 0 060D      DC /060D          RD-200,3, EVEN 32
08F7 0 050D      DC /050D          WT-200,3, EVEN 33
08F8 0 0606      DC /0606          READ FNC & MDD 34
08F9 0 0506      DC /0506          WRT FNC & MDD 35
08FA 0 0001      DC 1              CDNSTANT DNE 36
08FB 0 0000      DC 0              DRIVE SELECTION 37
08FC 0 0000      DC 0              RECDRD CT SAVE 38
08FD 0 0606      DC /0606          READ FNC & MDD 39
08FE 0 0506      DC /0506          WRT FNC & MDD 40
08FF 0 0000      DC 0              RTN 14/17 SW 41
0900 0 0000      DC 0              SENSE WD STORAGE 42
0901 0 0000      DC 0              REQ DEV RETURN 43
0902 0 0000      DC 0              REL DEV RETURN 44
0903 1 0C18      DC LIV0          LDST INT VEC DR 0 45
0904 0 0000      DC 0              46SE
0905 1 6700 0974 SETX6 LDX L3 MTTWD IX3#ADRS CMN 47 48
0907 0 4D80 002E BSC 11 46 EXIT 49 50 SX
*
*          DRIVE 1 TABLE OF CONSTANTS
*          AND RETURNS
*
* *** ***/
0909 D 00FF      DR1TB DC /00FF      DR 1 LDDP RTN SAVE
090A 0 0000      DC 0              WRITE RTN RETURN 1
090B 0 0000      DC 0              ERA RTN RETURN 2
090C 0 0422      DC /0422          ERA MDD & FNC 3
090D 0 0000      DC 0              WR TM RTN RETURN 4
090E 0 0421      DC /0421          WR TM FNC & MDD 5
090F 0 0000      DC 0              RD RTN RETURN 6
0910 0 0000      DC 0              RD RETRY SW 7
```

80702740
80702750
80702760
80702770
80702780
80702790
80702800
80702810
80702820
80702830
80702840
80702850
80702860
80702870
80702880
80702890
80702900
80702910
80702920
80702930
80702940
80702950
80702960
80702970
80702980
80702990
80703000
80703010
80703020
80703030
80703040
80703050
80703060
80703070
80703080
80703090
80703100
03110
03120
80703130
80703140
80703150
80703160
80703170
80703180
80703190
80703200
80703210
80703220
80703230
80703240
80703250
80703260
80703270
80703280
80703290
80703300
80703310
80703320
80703330
80703340
80703350
80703360
80703370
80703380
80703390
80703400
80703410

0911 0 0000
0912 0 0428
0913 0 0000
0914 0 0424
0915 0 0000
0916 0 0720
0917 0 0000
0918 0 0000
0919 1 08D2
091A 0 0000
0918 1 08E5
091C 0 0000
091D 0 0000
091E 0 0000
091F 1 0D5C
0920 0 0000
0921 0 0000
0922 0 0000
0923 0 0000
0924 0 0700
0925 0 0728
0926 0 0000
0927 0 0530
0928 0 0630
0929 0 062D
092A 0 052D
092B 0 0626
092C 0 0526
092D 0 0001
092E 0 0020
092F 0 0000
0930 0 0626
0931 0 0526
0932 0 0000
0933 0 0000
0934 0 0000
0935 0 0000
0936 1 0C1A
0937 0 0000
0938 0 70CC

```
DC 0      BSP RTN RETURN 8      80703420
DC /0428   BSP FNC & MOD 9       80703430
DC 0       RWD RTN RETURN 10      80703440
DC /0424   RWD FNC & MOD 11       80703450
DC 0       SENSE RTN RETURN 12    80703460
DC /0720   SENSE FNC & MOD 13     80703470
DC 0       STAC RTN RETURN 14     80703480
DC 0       SET MLSCF STORAGE 15   80703490
DC SETX1   SET MLSCF ENTRY 16     80703500
DC 0       SET INT RETURN 17      80703510
DC SETI1   SET INT ENTRY 18       80703520
DC 0       CK8SY RETURN 19        80703530
DC 0       CK AVL RETURN 20       80703540
DC 0       LDG/ERRDR SW 21        80703550
DC MERX1   DR1 MSG ADRS 22        80703560
DC 0       MER/MLG RETURN 23      80703570
DC 0       RTN 3/4 SW 24          80703580
DC 0       RTN 5/6 SW 25          80703590
DC 0       SET UP 1 RETURN 26     80703600
DC /0700   RTN 9 MDD & FNC 27     80703610
DC /0728   PRDG STDP MDD&FNC 28   80703620
DC 0       EXPECTED TM DATA 29   80703630
DC /0530   WRT-556,2,DDD 30       80703640
DC /0630   RD-556,2,DDD 31        80703650
DC /062D   RD-200,3, EVEN 32      80703660
DC /052D   WRT-200,3, EVEN 33     80703670
DC /0626   READ MDD & FNC 34      80703680
DC /0526   WRT MDD & FNC 35       80703690
DC 1       CDNSTANT DNE 36        80703700
DC /0020   DRIVE SELECTION 37     80703710
DC 0       RECDRD CT SAVE 38      80703720
DC /0626   RD MDD & FNC 39        80703730
DC /0526   WRT MDD & FNC 40       80703740
DC 0       RTN 14/17 SW 41        80703750
DC 0       SENSE WD STDRAGE 42    80703760
DC 0       REQ DEV RETURN 43      80703770
DC 0       REL DEV RETURN 44      80703780
DC LIV1    LOST INT VEC DR 1 45   80703790
DC 0       46SE
MDX SETX6  47
* *** ***/
*          DEVICE STATUS TABLES
*          DRIVE 0
*
* *** ***/
DSTO DC 0      NUMBER TRACKS 0    80703880
DC 0      AREA CODE 1           80703890
DC 0      FUNCTION 2            80703900
DC 0      MODIFIER 3            80703910
DC 0      READ TM 4             80703920
DC 0      WD CT RECEIVED 5       80703930
DC 0      EXPECTED WD CT 6       80703940
DC 0      WRITE TM 7            80703950
DC 0      LAST DSW 8            80703960
DC 0      PASS CT 9             80703970
DC 0      RECDRD CT 10          80703980
DC 0      WD CT FDR CK 11       80703990
DC 0      TDAL WRITES 12        80704000
DC 0      TDAL READS 13         80704010
DC 0      TDAL REWINDS 14       80704020
DC 0      WD CT DESIRED 15      80704030
DC 0      RECDV RD CT 16        80704040
DC 0      RECDV WT CT 17        80704050
DC 0      UNRECDV RD CT 18      80704060
DC 0      UNRECDV WT CT 19      80704070
DC 0      TAPE ERASE CT 20      80704080
DC 0      ERRDR CONTROL 21      80704090
```


IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

PART NO. 2196370
PAGE 5

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

PART NO. 2196370
PAGE 5A

```
09DF 0 0000      OC      0      I/O AREA &14      107      80705460
09EO 0 0000      OC      0      I/O AREA &15      108      80705470
09E1 0 0000      OC      0      I/O AREA &16      109      80705480
09E2 0 0000      DC      0      I/O AREA &17      110      80705490
09E3 0 0000      OC      0      I/O AREA &18      111      80705500
09E4 0 0000      OC      0      I/O AREA &19      112      80705510
09E5 0 0000      OC      0      I/O AREA &20      113      80705520
09E6 0 0000      OC      0      114 SE      80705530
09E7 1 4C00 ODB1 INTIG BSC L INTIE SET INT IGNRE115 116 80705540
09E9 0 0000      OC      0      117 SE      80705550
09EA 0 4326      BSI 3 38 CK FOR BSY 118 80705560
09EB 0 4338      BSI 3 56 TO OIAG MON 119 80705570
* *** **
* *** **
*
* CHECK FOR SELECTED DRIVES
* BEING READY
*
* *** **
MON03 BSI L SETX4 SET IXING TO DR 0 SRC 80705640
      BSI 3 B4 GO REQ DEVICE SRC 80705650
      LD L MTIO GET AREA CODE 80705660
      STO 2 1 SET IN DST 80705670
      LD L SW2 GET SW FNC 2 80705680
      BSC &Z IS DR 0 SELECTED 80705690
      TO BE RUN 80705700
* MDX MON04 NO-CK OR 1 80705710
      MDX L SELSW,1 AOD 1 TO SEL SW 80705720
      BSI 3 32 GO SENSE DEVICE SRC 80705730
      BSC E IS DRIVE READY 80705740
      MDX MON01 NO-GO PRINT 80705750
      BSI 3 35 GO SET MLSCF ENTRY SRC 80705760
      DC MON12 80705770
*
* CHECK DRIVE ONE
*
MON04 BSI L SETX5 SET IXING TO DR 1 SRC 80705780
      LD L MTIO GET AREA CODE 80705790
      STO 2 1 SET IN DST 80705800
      BSI 3 81 GO RELEASE DEVICE SRC 80705810
      SLA 16 ZERO ACCUM 80705820
      STO L ACMT CLEAR DR SEL 80705830
      LD 2 0 GET NO TRACKS 80705840
      BSC L MON05,&Z BRANCH # NO DR 1 80705850
      LD L SW2 GET SW FNC 2 80705860
      SLA 1 80705870
      BSC &Z IS OR 1 SELECTED 80705880
      TO BE RUN 80705890
* MDX MON05 NO-EXIT 80705900
      MDX L SELSW,1 AOD 1 TO SEL SW 80705910
      BSI 3 32 GO SENSE DEVICE SRC 80705920
      BSC E IS DRIVE READY 80705930
      MDX MON02 NO-GO PRINT 80705940
      BSI 3 35 GO SET MLSCF ENTRY SRC 80705950
      DC MON12 80705960
MON05 MDX L SELSW,0 IS A DRIVE SELECTED 80705970
*****
MONAC BSI 3 56 GO TO OIAG MON-START* 80705980
*****
      BSI 3 B GO TO PRINT VIA MLG SRC 80706000
      DC /C002 ID 2 80706010
      OC /0000 LINE 0 - FORM 0 80706020
      MOX MONAA 80706030
*
* DR 0 SELECTED BUT NOT ROY
*
MON01 BSI 3 8 GO TO PRINT VIA MLG SRC 80706040
      OC /C000 IO 0 80706050
      80706060
      80706070
      80706080
      80706090
      80706100
      80706110
      80706120
      80706130
```

```
0A1E 0 0000      OC      /0000      LINE 0 - FORM 0      80706140
0A1F 0 4C80 012E *****
MONAA BSC I END GO END PROGRAM * 80706150
***** 80706160
* 80706170
* DR 1 SELECTED BUT NOT ROY 80706180
* 80706190
MON02 BSI 3 8 GO TO PRINT VIA MLG SRC 80706200
      OC /C001 IO 1 80706210
      OC /0000 LINE 0 - FORM 0 80706220
      MOX MONAA 80706230
* 80706240
* CHECK SWITCH SETTINGS 80706250
* 80706260
* 80706270
* 80706280
OAG12 LO L SWO GET SW FNC 0 80706290
      BSC L MONAA,E BRANCH # TERMINATE 80706300
      MDX MON10 80706310
* 80706320
* SET TO NEXT RTN 80706330
* 80706340
MON17 LO 2 28 GET RTN NUMBER 80706350
MON16 A 1 36 ADD ONE 80706360
      STO 2 28 SAVE 80706370
* 80706380
* BRANCH TO SELECTED RTN 80706390
* 80706400
MON09 BSI 3 32 GO SENSE DEVICE SRC 80706410
      SRA 2 80706420
      BSC E IS DR AT EOT 80706430
      BSI 3 17 YES-GO REWIND SRC 80706440
      BSI 3 41 GO CK DR FOR AVAIL SRC 80706450
      LDX 3 20 80706460
MON20 DC /2F40 CLEAR STORAGE PRCT 80706470
      OC IOA 80706480
      MDX 3 -1 DECR IX 3 80706490
      MDX MON20 LOOP 80706500
      LO 2 28 GET RTN NUMBER 80706510
      A TAG01 ADD TABLE ADDRESS 80706520
      STO MON18+1 PLACE IN BRANCH ADDRESS 80706530
* 80706540
* BSI 1 46 SET IX 3 SRC 80706550
MON18 BSC I *-* GO TO RTN 80706560
* 80706570
* LOOP ROUTINE SW IS ON 80706580
* 80706590
* 80706600
MON10 LO L SW1 GET SW FNC 01 80706610
      ANO 1 0 SAVE SELECTION 80706620
      BSC L MON17,&- BRANCH IF ZERO 80706630
MON19 STO 2 28 SET AS RTN NO 80706640
      SRA 8 MOVE OR 0 SELECTION 80706650
      BSC L MON09,&- RETURN IF ZERO 80706660
      MOX MON19 LOOP ON NOT 0 80706670
* 80706680
* TABLE OF ROUTINE ADDRESSES 80706690
* TAG01 DC * TABLE ADDRESS 80706700
MONXB DC /0012 TABLE ADDRESS 80706710
MONXA DC F01AA ROUTINE NUMBER 1 80706720
      DC F02AA 2 80706730
      DC F03AA 3 80706740
      DC F04AA 4 80706750
      DC F05AA 5 80706760
      DC F06AA 6 80706770
      DC F07AA 7 80706780
      DC F08AA 8 80706790
      DC F09AA 9 80706800
      DC F0AAA 10 80706810
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319APROG ID 0807-1
PAGE 5DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319APROG ID 0807-1
PAGE 5A

2400 FUNCTION TEST

```
0A53 1 0ED8      DC      FOBAA      11
0A54 1 0EE1      DC      FOCAA      12
0A55 1 0F24      DC      FODAA      13
0A56 1 0F58      DC      FOEAA      14
0A57 1 0F92      DC      FOFAA      15
0A58 1 0FA9      DC      F10AA      16
0A59 1 0F56      DC      F11AA      17
0A5A 1 0A5B      DC      MRTN      PRDG CDMPLTE
* *** **
*
*          ROUTINES RETURN HERE
*
* *** **
MRTN  LD      2 28      GET RTN NUMBER
0A5C 0 F0EB      EOR      MONXB
0A5D 1 4C20 0A25  BSC      L      MON12,Z      BRANCH # PRDG NDT
*
*          LD      2 24      GET PRDG CT
0A60 0 8124      A      1 36      ADD ONE
0A61 0 D218      STD      2 24      SAVE
*
*          BSI      3 8      GO TO PRINT VIA MLG SRC
0A62 0 4308      DC      /D001      ID 01
0A63 0 D001      DC      /0005      LINE 0 - FORM 5
0A64 0 0005      BSI      3 8      GO TO PRINT VIA MLG SRC
0A65 0 4308      DC      /D001      ID 01
0A66 0 D001      DC      /8008      LINE 2 FORM 8
0A67 0 8008      SLA      16      ZERO ACCUM
0A68 0 1010      STD      2 28      SET RTN NUMBER # 0
0A69 0 D21C      MDX      MON12      CONTINUE
0A6A 0 70BA
* *** **
*
*          THIS IS THE WRITE ROUTINE
*
* *** **
WRTME LD      3 23      GET RETURN      SE
0A6C 0 D101      STO      1 1      SAVE RETURN
0A6D 0 4326      BSI      3 38      GO CK DR FOR BUSY SRC
0A6E 0 1010      SLA      16
0A6F 0 D215      STO      2 21      CLEAR ERRDR CNTRDL
0A70 0 4326      WRTB      BSI      3 38      GD CK DR FDR BUSY SRC
0A71 0 C123      LD      1 35      GET WRT FNC & MOD
0A72 0 4349      BSI      3 73      GD SET UP&ISSUE CMD SRC
*
*          WRITE COMPLETE ROUTINE
*
*
WRTI  LD      2 12      GET TOTAL WRT CT
0A74 0 8124      A      1 36      ADD ONE
0A75 0 D20C      STO      2 12      SAVE
0A76 0 C20A      LD      2 10      GET REC CT
0A77 0 8124      A      1 36      ADD ONE
0A78 0 D20A      STO      2 10      SAVE
0A79 0 4351      BSI      3 81      GO RELEASE DEVICE SRC
0A7A 0 C208      WRTIA LD      2 8      GET SENSE WD
0A7B 0 E034      AND      WRIX4      CK FOR ERROR
0A7C 0 4B20      BSC      Z      SKIP # DK
0A7D 0 701B      MDX      WRTIE      BAD DSW
0A7E 1 C400 0802  LD      L      SWO      GET SW FNC 0
0A80 0 1008      SLA      8
0A81 1 4C10 0A94  BSC      L      WRT01,-      BRANCH # EOT SW OFF
*
*
WRT02 LD      2 8      GET SENSE WD
0A84 0 E346      AND      3 70      CK FOR EOT
0A85 0 4B20      BSC      Z      SKIP # NOT EOT
0A86 0 431A      WRT03 BSI      3 26      GD WRT TM SRC
0A87 0 D207      WRTAI STO      2 7      LD TM SW
0A88 0 C215      LD      2 21      GET ERRDR CTL
0A89 0 4B20      BSC      Z      ANY PREVIOUS ERROR
```

```
80706820
80706830
80706840
80706850
80706860
80706870
80706880
80706890
80706900
80706910
80706920
80706930
80706940
80706950
80706960
80706970
80706980
80706990
80707000
80707010
80707020
80707030
80707040
80707050
80707060
80707070
80707080
80707090
80707100
80707110
80707120
80707130
80707140
80707150
80707160
80707170
80707180
80707190
80707200
80707210
80707220
80707230
80707240
80707250
80707260
80707270
80707280
80707290
80707300
80707310
80707320
80707330
80707340
80707350
80707360
80707370
80707380
80707390
80707400
80707410
80707420
80707430
80707440
80707450
80707460
80707470
80707480
80707490
```

2400 FUNCTION TEST

```
0A8A 0 7002      MDX      WRTID      YES
0A8B 0 4D80 0001  WRTIC BSC      11 1      EXIT      SX
*
*          HAD A PREVIOUS ERRDR
*
*
WRTID LD      2 17      GET REC WRT CT
0A8E 0 8124      A      1 36      ADD ONE
0A8F 0 D211      STD      2 17      SAVE
*
*          BSI      3 8      GO TO PRINT VIA MLG SRC
0A90 0 4308      DC      /A001      ID 01
0A91 0 A001      DC      /0003      LINE 0 - FDRM 3
0A92 0 0003      MDX      WRTIC
0A93 0 70F7
*
*
*          WRITE TO EOT SW IS OFF
*
*
*
WRT01 LD      2 10      GET RECORD ND
0A94 0 C20A      S      WRIX7      SUB 501
0A95 0 901C      BSC      L      WRT03,-      BRANCH # AT REC 500
0A96 1 4C18 0A86  MDX      WRT02      NDT REC 500
0A98 0 70EA
*
*
*          DSW NOT CORRECT
*
*
WRTIE LD      2 8      GET SENSE WD
0A99 0 C208      AND      WRIX6      CK FOR CORR
0A9A 0 E016      BSC      Z      SKIP # CORR
0A9B 0 4B20      MDX      WRTII
0A9C 0 700C
*
*          BSI      3 8      GO TO PRINT VIA MLG SRC
0A9D 0 4308      DC      /A002      ID 02
0A9E 0 A002      DC      /0002      LINE 0 - FORM 2
0A9F 0 0002
*
*
*          CK NUMBER RETRYS
*
*
WRTIH LD      2 21      GET ERRDR CTRL
0AA0 0 C215      S      3 0      SUB 2
0AA1 0 9300      BSC      L      WRTII,-      BRANCH # 3 RETRYS
0AA2 1 4C18 0AA9  A      3 1      ADD 3
0AA4 0 8301      STD      2 21      SAVE
0AA5 0 D215      BSI      3 14      GD BACKSPACE SRC
0AA6 0 430E      BSI      3 29      GD ERASE SRC
0AA7 0 431D      MDX      WRTB      GD WRT
0AA8 0 70C7
*
*
*          UNREC ERROR
*
*
WRTII LD      2 19      GET UNREC WT CT
0AA9 0 C213      A      1 36      ADD ONE
0AAA 0 8124      STO      2 19      SAVE
0AAB 0 D213
*
*          BSI      3 11      GO TO PRINT VIA MER SRC
0AAC 0 4308      DC      /E003      ID 03
0AAD 0 E003      DC      /0002      LINE 0 - FDRM 2
0AAE 0 0002      MDX      WRTIC      CONTINUE
0AAF 0 70DB
*
*
*          CONSTANTS
*
*
WRIX4 DC      /2F83      DSW ERROR CK
0AB0 0 2F83      WRIX6 DC      /2C13      NONCORR ERROR CK
0AB1 0 2C13      WRIX7 DC      501      CONSTANT 501
0AB2 0 01F5
* *** **
*
```

```
80707500
80707510
80707520
80707530
80707540
80707550
80707560
80707570
80707580
80707590
80707600
80707610
80707620
80707630
80707640
80707650
80707660
80707670
80707680
80707690
80707700
80707710
80707720
80707730
80707740
80707750
80707760
80707770
80707780
80707790
80707800
80707810
80707820
80707830
80707840
80707850
80707860
80707870
80707880
80707890
80707900
80707910
80707920
80707930
80707940
80707950
80707960
80707970
80707980
80707990
80708000
80708010
80708020
80708030
80708040
80708050
80708060
80708070
80708080
80708090
80708100
80708110
80708120
80708130
80708140
80708150
80708160
80708170
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196370
PAGE 7

2400 FUNCTION TEST

```
*          THIS IS THE ERASE ROUTINE
*
* *** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** 
ERAE LD 3 29      GET RETURN      SE
      STO 1 2      SAVE
      BSI 3 38     GO CK DR FOR BUSY SRC
      LD 1 3      GET MOD & FNC
      BSI 3 73     GO SET UP&ISSUE CMD SRC
*
*          ERASE COMPLETE RETURN
*
ERAB LD 2 20      GET ERASE COUNT
      A 1 36      ADD 1
      STO 2 20     SAVE
      BSI 3 81     GO RELEASE DEVICE SRC
      BSC 11 2     EXIT            SX
* *** ** ** ** *
*
*          THIS THE WRT TAPE MARK RTN
*
* *** ** ** ** *
WTME LD 3 26      GET RETURN      SE
      STO 1 4      SAVE RETURN
      BSI 3 38     GO CK DR FOR BUSY SRC
      LD 1 5      GET FNC & MOD
      BSI 3 73     GO SET UP&ISSUE CMD SRC
*
*          WRT TAPE MARK COMPLETE
*
WTMAB BSI 3 81     GO RELEASE DEVICE SRC
      LD 1 36     GET ONE
      STO 2 7     SET WRT TM SW
      BSC 11 4     EXIT            SX
* *** ** ** ** *
*
*          THIS IS THE READ ROUTINE
*
* *** ** ** ** *
RDTE LD 3 20      GET RETURN      SE
      STO 1 6      SAVE RETURN
      BSI 3 38     GO CK DR FOR BUSY SRC
      SLA 16
      STO 2 21     CLEAR ERROR CONTROL
      STO 1 7     CLEAR RETRY SW
      BSI 3 38     GO CK DR FOR BUSY SRC
      SLA 16      CLEAR ACCUM
      STO RDT8A    CLEAR ERROR SW
      LD 1 34     GET READ MOD & FNC
      BSI 3 73     GO SET UP&ISSUE CMD SRC
*
*          CONSTANTS
*
RDTXA DC /2FB3    DSW OK CK
RDTXB DC /3FCF    WLR DR DIAG CK
RDTXD DC /2C03    NON CORRECTABLE CK
RDYD DC /00FF     SAVE REREAD CT
RDT8A DC 0        ERROR SW
*
*          READ COMPLETE ROUTINE
*
RDTI2 LD 2 10     GET REC CT
      A 1 36      ADD ONE
      STO 2 10     SAVE
      BSI 3 81     GO RELEASE DEVICE SRC
*
*          CHECK RETRY SW
*
LD 1 7           GET RETRY SW
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196370
PAGE 7A

2400 FUNCTION TEST

```
OADD 1 4C20 0B57
*
OAEF 0 C200
OAE0 0 8124
OAE1 0 D200
*
*          BSC L RDT7A,Z BRANCH # RETRY
*
LD 2 13      GET TOTAL RD CT
A 1 36      ADD ONE
STO 2 13
*
*          CHECK FOR TAPE MARK
*
LD 2 8      GET SENSE WD
SRA 2
BSC E       IS DR AT TM
MDX RDT29   YES
RDT35 SLA 16
RDT36 STO 2 4 SET IN TM SW
*
*          CK IF SENSE WD IS GOOD
*
LD 2 8      GET SENSE WD
AND RDTXA   CK FOR EXPECTED
BSC Z       SKIP # OK
MDX RDT03   DSW BAD
*
*          CHECK RECORD CT
*
RDCKR BSI 3 114 GO SET INT IGNORE SRC
      LD L SWO   GET SW FNC 0
      SLA 7
      BSC L CKDTA,&Z BRANCH # CRC CK DN
      LD 2 10     GET REC CT
      S 1 36     SUB ONE
      BZ CKDTA   BRANCH IF EQUAL TO 1
      EOR 3 94   COMPARE WITH REC RD
      BSC L CKDTA,&- BR = NO PREV ERR
      BSI 3 114  SET INTRPT IGNORE SRC
      BSI 3 8    PRINT VIA MLG SRC
      DC /A006   ID 06
      DC /0004   LINE 0 - FORM 4
      BSI 3 114  SET INTRPT IGNORE SRC
      LD 3 94   GET REC NO READ
      A 1 36     ADD ONE
      STO 2 10   SET AS EXPECTED
      MDX L RDT8A,1 INCR ERRDR SW
      BSI 3 44   GO CK DATA SRC
      MDX L RDT8A,0 IS ERROR SW # 0
      MDX RDT37  NO-RETRY
      LD 2 21     GET ERROR CTRL
      BSC L RDT19,+ BRANCH = NO PREV ERR
      LD 2 16     GET RECOVERED RD CT
      A 1 36     ADD ONE
      STD 2 16   SAVE
      BSI 3 8    PRINT VIA MLG SRC
      DC /A003   ID 03
      DC /0003   LINE 0 - FORM 3
      LD 1 6     GET RETURN
      A 1 36     ADD ONE
      STD 1 6    SAVE
      BSC 11 6   EXIT            SX
*
*          9 TRACK TM READ
*
RDT29 LD 2 9      GET TAPE PASS CT
      A 3 0      ADD 2
      STO 2 9     SAVE
      LD 1 36     GET ONE
      STO 2 4     SET TM SW
      MDX RDT19
      MDX RDT19
*
OB15 0 C209
OB16 0 8300
OB17 0 0209
OB18 0 C124
OB19 0 D204
OB1A 0 70F5
OB1B 0 70F4
```

2400 FUNCTION TEST

```
*
*          DSW WAS NOT CORRECT
*
OB1C 0 C208      RDT03 LD 2 8      GET SENSE WD
OB1D 0 E0B7      AND RDTXD      CK FOR CORRECTABLE
OB1E 0 4820      BSC 2          SKIP # CORRECTABLE
OB1F 0 703C      MDX RDT18      NDT CORRECTABLE
OB20 0 4308      BSI 3 8        GO TO PRINT VIA MLG SRC
OB21 0 A004      DC /A004      ID 04
OB22 0 0002      DC /0002      LINE 0 - FORM 2
OB23 1 C400 0813 LD L TERM5     BYPASS CK IF ON LINE
OB25 1 4C20 0806 BSC L RDT30-1,Z
OB27 0 C208      LD 2 8        GET SENSE WD
OB28 0 E0A8      AND RDTXB      CK WLR OR DIAG
OB29 1 4C18 082D BSC L RDT20,&-  SKIP # NO RETRY
OB2B 1 7401 0AD7 MDX L RDT8A,1  INCR ERROR SW
OB2D 0 708E      RDT20 MDX RDCKR  GO CK HDR
OB2E 0 C215      RDT37 LD 2 21   GET ERROR CONTROL
OB2F 0 E0A6      AND RDTY0      SAVE REREAD CT
OB30 0 9341      S 3 65        SUB 9
OB31 0 4818      BSC &-        IS READ CT # 9
OB32 0 7005      MDX RDT15      YES-GO PASS CLEANER
*
OB33 0 C215      LD 2 21       GET ERROR CONTROL
OB34 0 8124      A 1 36        ADD 1
OB35 0 D215      STO 2 21      SAVE
OB36 0 430E      BSI 3 14      GO BACKSPACE SRC
OB37 0 7096      MDX RDT1      GO RETRY
*
*          REREAD CT WAS 9
*
OB38 0 C215      RDT15 LD 2 21   GET ERROR CTRL
OB39 0 1808      SRA 8
OB3A 0 9341      S 3 65        SUB 9
OB3B 1 4C18 085C BSC L RDT18,&-  BRANCH # CLEAN CT#10
OB3D 0 8340      A 3 64        ADD TEN
OB3E 0 1008      SLA 8
OB3F 0 D215      STO 2 21      SAVE
*
*          BACKSPACE PAST CLEANER
*
OB40 0 6305      LDX 3 5
OB41 0 6807      RDT16 STX 3 RDTXC&1  SAVE IX 3
OB42 0 412E      BSI 1 46      SET IX 3 SRC
OB43 0 C20A      LD 2 10      GET REC CT
OB44 0 9124      S 1 36      SUB ONE
OB45 1 4C18 0863 BSC L RDT22,&-  IS TAPE AT 1ST REC
OB47 0 430E      BSI 3 14      GO BACKSPACE SRC
OB48 0 6700 0000 RDTXC LDX L3 0    RESTORE IX 3
OB4A 0 73FF      MDX 3 -1     DECR IX 3
OB4B 0 70F5      MDX RDT16     LOOP
*
*          RECORD IS PAST CLEANER
*          REPOSITION TO REC DESIRED
*
OB4C 0 6305      LDX 3 5
OB4D 0 680A      RDT17 STX 3 RDT7A&1  SAVE IX 3
OB4E 0 C124      LD 1 36      GET ONE
OB4F 0 D107      STO 1 7      SET RETRY SW
OB50 0 73FF      MDX 3 -1     DECR IX 3
OB51 0 7002      MDX RDT04     GO SKIP 1 REC
OB52 0 1010      SLA 16
OB53 0 D107      STO 1 7      CLEAR RETRY SW
OB54 0 412E      RDT04 BSI 1 46   SET IX 3 SRC
OB55 1 4C00 0ACE BSC L RDT1      GO RETRY
OB57 0 6700 0000 RDT7A LDX L3 0    RESTORE IX 3
OB59 0 73FF      MDX 3 -1
OB5A 0 70F2      MDX RDT17
OB5B 0 70F1      MDX RDT17
```

PROG ID 0807-1
PAGE 8

2400 FUNCTION TEST

```
*
*          UNCORRECTABLE ERROR
*
OB5C 0 C212      RDT18 LD 2 18   GET UNRECOV RD CT
OB5D 0 8124      A 1 36      ADD ONE
OB5E 0 D212      STD 2 18     SAVE
OB5F 0 4308      BSI 3 11     GO TO PRINT VIA MER SRC
OB60 0 E004      DC /E004     ID 04
OB61 0 0002      DC /0002     LINE 0 - FORM 2
OB62 0 70AD      MDX RDT19     CONTINUE
*
*          TAPE REACHED LOAD POINT-
*          DID NOT PASS CLEANER
*
OB63 0 4308      RDT22 BSI 3 8    GO TO PRINT VIA MLG SRC
OB64 0 A005      DC /A005      ID 05
OB65 0 0003      DC /0003      LINE 0 - FORM 3
*
OB66 0 C348      LD 3 72      GET 0005
OB67 0 90E1      S RDTXC&1     SUB PRESENT LOC
OB68 0 D0E0      STO RDTXC&1    SAVE
OB69 1 6780 0849 LDX I3 RDTXC&1  IX 3 # RECS TO PASS
OB6B 0 70E1      MDX RDT17      GO RESTORE TAPE
*
*          THIS IS THE BACKSPACE RTN
*
OB6C 0 C30E      BSPE LD 3 14    GET RETURN SE
OB6D 0 D108      STO 1 8      SAVE RETURN
OB6E 0 4326      BSP02 BSI 3 38   GO CK DR FOR BUSY SRC
OB6F 0 C109      BSP06 LD 1 9    GET FNC & MOD
OB70 0 4349      BSI 3 73      GO SET UP&ISSUE CMD SRC
*
*          BACKSPACE COMPLETED
*
OB71 0 C20A      BSP12 LD 2 10    GET REC CT
OB72 1 4C18 0876 BZ *+2      SKIP SUBT. IF ALRDY ZERO $
OB74 0 9124      S 1 36      SUB ONE
OB75 0 D20A      STO 2 10     SAVE
OB76 0 4351      BSI 3 81     GO RELEASE DEVICE SRC
OB77 0 4D80 0008 BSP05 BSC I1 8    EXIT SX
*
*          THIS IS THE REWIND ROUTINE
*
OB79 0 C311      RWDE LD 3 17    GET RETURN SE
OB7A 0 D10A      STO 1 10     SAVE RETURN
*
*          CK FOR LD PT
*
OB7B 0 4329      RWD04 BSI 3 41    GO CK FOR AVAIL SRC
OB7C 0 4326      BSI 3 38      GO CK FOR BUSY SRC
OB7D 0 4320      BSI 3 32      GO SENSE DEVICE SRC
OB7E 0 100C      SLA 12
OB7F 0 4828      BSC &Z      IS DR AT LD PT
OB80 0 7011      MDX RWD11     YES
*
*          OK TO REWIND
*
OB81 0 C20E      LD 2 14      GET REWIND COUNT
OB82 0 8124      A 1 36      ADD 1
OB83 0 D20E      STO 2 14     SAVE
OB84 0 C108      LD 1 11     GET FNC & MOD
OB85 0 D202      STO 2 2      SET FNC IN DST
OB86 0 D203      STO 2 3      SET MOD IN DST
OB87 0 F201      EOR 2 1      SET AREA CODE
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319APROG ID 0807-1
PAGE 8A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TEST

PART NO. 2196370
PAGE 9

```
0888 0 0305      STO 3 5      SET IOCC      80710900
0889 0 7017      MOX      COM3F      GO ISSUE COMMANDO      80710910
088A 0 4351      RWDIR BSI 3 81      GO RELEASE      SRC      80710920
088B 0 4320      RWDI2 BSI 3 32      GO SENSE DEVICE      SRC      80710930
088C 0 100C      SLA 12      80710940
088D 0 4828      BSC 8Z      IS DR AT LD PT      80710950
088E 0 7003      MDX      RWDI1      YES      80710960
088F 0 4323      BSI 3 35      SET MLSCF ENTRY      SRC      80710970
0890 1 0888      DC      RWDI2      80710980
0891 0 4338      *****      80710990
      BSI 3 56      GO TO DIAG MDN-START*      80711000
      *****      80711010
      *      80711020
      *      DRIVE AT REC 1 OR LOAD PT      80711030
      *      80711040
0892 0 4326      RWDI1 BSI 3 38      CK FOR BUSY      SRC      80711050
0893 0 C124      RWD08 LO 1 36      GET ONE      80711060
0894 0 D20A      STO 2 10      SET REC CT # 1      80711070
0895 0 4329      BSI 3 41      GO CK FDR AVAIL      SRC      80711080
0896 0 4080 000A      BSC 11 10      EXIT      SX      80711090
      * *** **      80711100
      *      80711110
      *      COMMON ROUTINE TO SET UP      80711120
      *      IOCC, SET WD CT, SAVE THE      80711130
      *      DRIVE SELECTION AND ISSUE      80711140
      *      THE COMMANDO      80711150
      *      80711160
      * *** **      80711170
0898 0 D202      COM3E STD 2 2      SET FNC IN DST      SE      80711180
0899 0 0203      STO 2 3      SET MOD IN DST      80711190
089A 0 F201      EOR 2 1      SET AREA CODE      80711200
089B 0 0305      STO 3 5      SET IOCC      80711210
089C 0 C20F      LO 2 15      GET WD CT      80711220
089D 0 F347      EOR 3 71      SET NO EOT INTRPT      80711230
089E 0 D350      STO 3 93      SET IN I/O AREA      80711240
089F 0 C20A      LO 2 10      GET RECORD CT      80711250
08A0 0 035E      STD 3 94      SET IN I/O AREA & 1      80711260
08A1 0 C124      COM3F LD 1 36      GET ONE      80711270
08A2 0 D21A      STO 2 26      SET IN OR BUSY SW      80711280
08A3 0 4354      BSI 3 84      GO REQUEST DEVICE      SRC      80711290
08A4 0 0804      XIO 3 4      ISSUE COMMANDO      80711300
08A5 0 4326      BSI 3 38      CK FOR BUSY      SRC      80711310
      *****      80711320
      BSI 3 56      GO TO DIAG MDN START*SX      80711330
      *****      80711340
      * *** **      80711350
      *      80711360
      *      80711370
      *      THIS IS THE SENSE DEVICE      80711380
      *      ROUTINE      80711390
      *      80711400
      * *** **      80711410
      *      80711420
08A7 0 C320      DSWEN LO 3 32      GET RETURN      SE      80711430
08A8 0 D10C      STO 1 12      SAVE RETURN      80711440
      *      80711450
      *      80711460
      *      80711470
08A9 0 C100      OSWB LD 1 13      GET FNC & MOD      80711480
08AA 0 F201      EOR 2 1      SET AREA CODE      80711490
08AB 0 0307      STO 3 7      SET IOCC      80711500
08AC 0 6302      OSW13 LOX 3 2      SET FOR DOUBLE SENSE      80711510
08AD 0 097A      OSW0 XIO L IOCC3      ISSUE SENSE      80711520
08AE 0 088A      STO L3 OSWX0-1      SAVE SENSE WORDS      80711530
08AF 0 73FF      MOX 3 -1      DECR IX 3      80711540
08B0 0 70FA      MOX      OSW0      LOOP      80711550
08B1 0 C00B      OSW11 LO OSWX0&1      GET FIRST SENSE WORD      80711560
08B2 0 F006      EOR OSWX0      COMPARE WITH SECOND      80711570
08B3 0 4820      BSC Z      IS DRIVE FULLY SELEC      80711580
08B4 0 70F5      MOX OSW13      NO SENSE AGAIN      80711590
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TEST

PART NO. 2196370
PAGE 9A

```
08B7 0 412E      *      BSI 1 46      SET IX 3      SRC      80711600
08B8 0 C002      DSWD LO      DSWX0      GET SENSE WD      80711610
08B9 0 4080 000C      BSC 11 12      EXIT      SX      80711620
      *      80711630
      *      80711640
      *      80711650
      *      80711660
      *      80711670
08BB 0 0000      DSWX0 DC 0      SECOND SENSE STORAGE      80711680
08BC 0 0000      DC 0      FIRST SENSE STORAGE      80711690
      * *** **      80711700
      *      80711710
      *      80711720
      * *** **      80711730
      *      80711740
08BD 0 C780 0023      STPSE LO I3 35      GET ADRS TO SET      SE      80711750
08BE 0 D10F      STO 1 15      SAVE      80711760
08BF 0 6700 080C      LDX L3 MLSCF&3      IX 3 # ADRS ML MLSCF      80711770
08C0 0 C300      LD 3 0      GET FIRST ENTRY      80711780
08C1 0 4820      BSC Z      IS IT ZERO      80711790
08C2 0 7C02      MDX      STPS2      NO      80711800
08C3 0 C301      LO 3 1      GET SECOND ENTRY      80711810
08C4 0 D300      STO 3 0      SET IN FIRST      80711820
08C5 0 C110      LD 1 16      GET NEW ENTRY      80711830
08C6 0 D301      STO 3 1      SET IN SECOND ENTRY      80711840
08C7 0 412E      BSI 1 46      SET IX 3      SRC      80711850
08C8 0 C323      LO 3 35      GET RETURN      80711860
08C9 0 8124      A 1 36      ADD ONE      80711870
08CA 0 D001      STO      STPS6&1      SAVE      80711880
08CB 0 4C00 0000      STPS6 BSC L 0      EXIT      SX      80711890
      *      80711900
      *      80711910
      *      80711920
08CC 0 404C      SETX0 BSI      SETX4      SET IXING TO DR 0      SRC      80711930
08CD 0 4080 000F      SETX3 BSC 11 15      GO TO PROPER ADRS      80711940
      *      80711950
08CE 0 4051      SETX1 BSI      SETX5      SET IXING TO DR 1      SRC      80711960
08CF 0 7CFC      MOX      SETX3      80711970
      * *** **      80711980
      *      80711990
      *      80712000
      *      80712010
      * *** **      80712020
      *      80712030
08D0 0 C780 0057      STIRE LO I3 87      GET ADRS TO SET      SE      80712040
08D1 0 D111      STO 1 17      SAVE RETURN      80712050
08D2 0 67C0 080A      LDX L3 MLSCF&1      IX 3 # ADR INT MLSCF      80712060
08D3 0 C300      LO 3 0      GET AN ENTRY      80712070
08D4 0 4820      BSC Z      IS IT ZERO      80712080
08D5 0 7002      MOX      STIRO      NO      80712090
08D6 0 C301      STIR1 LD 3 1      GET NEXT ENTRY      80712100
08D7 0 0300      STO 3 0      PUSH ENTRY UP      80712110
      *      80712120
      *      80712130
      *      80712140
08D8 0 C112      STIRO LO 1 18      GET NEW ENTRY      80712150
08D9 0 0301      STO 3 1      SET AT BOTTOM      80712160
08DA 0 4C00 0856      STIR6 BSC L MTIRE&1      EXIT      SX      80712170
      *      80712180
      *      80712190
      *      80712200
08DB 0 4039      SETI0 BSI      SETX4      SET IXING TO DR 0      SRC      80712210
08DC 0 4080 0011      SETI3 BSC 11 17      GO TO PROPER ADRS      80712220
      *      80712230
08DE 0 403E      SETI1 BSI      SETX5      SET IXING TO DR 1      SRC      80712240
08DF 0 70FC      MOX      SETI3      80712250
      * *** **      80712260
      *      80712270
      *      ROUTINE TO CHECK BUSY
```


IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

PART NO. 2196370
PAGE 11

```
OC56 1 C700 OE13      LD L3 FO4X2      GET PATTERN ADRS
OC58 0 D009           STD      MRC10+1      SET
*
*                      PDRIDN COMMON TO FDRMAT
*                      ZERO AND ONE
*
OC59 0 63EE          MRC03 LDX 3 -18      IX 3 # NUMBER WORDS
OC5A 0 61F7           LDX 1 -9          IX 1 # NUMBER PATT
OC5B 1 74FF OC90      MDX L PATWD&1,-1
OC5D 1 4400 09E6      MRC01 BSI L INTIG      GD SET INT IGNORE      SRC
OC5F 1 7401 OC6E      MDX L MRCXC,1      ADD 1 TO CK WD CT
OC61 0 C500 0000      MRC10 LD L1 0      GET PATTERN WD
OC63 0 D216           STD 2 22          SET IN DST
OC64 1 F700 09E5      EDR L3 IDA&20      CMPARE WITH WD RD
OC66 1 4420 OC89      BSI L MRC09,Z      BRANCH # ND CMPARE
OC68 0 7101           MDX 1 1          DECR IX 1
OC69 0 7001           MDX MRC02          GD DECR IX 3
OC6A 0 61F7           LDX 1 -9          RELOAD IX 1
OC6B 0 7301           MRC02 MDX 3 1      DECR IX 3
OC6C 0 70F0           MDX MRC01          LDDP
OC6D 0 7012           MDX MRC0C          GD EXIT
OC6E 0 0000           MRCXC DC 0        WD CT FDR CK
*
*                      FDRMAT IS TWO
*
OC6F 0 1010          MRC01 SLA 16        ZERD ACCUM
OC70 0 920F           S 2 15          GET WD CT CDMPL
OC71 0 8124           A 1 36          ADD 1
OC72 0 D001           STD MRC05&1      SAVE
OC73 0 6700 0000      MRC05 LDX L3 0      IX 3 # WD CT - 1
OC75 1 4400 09E6      MRC06 BSI L INTIG      GD SET INT IGNORE      SRC
OC77 1 7401 OC6E      MDX L MRCXC,1      ADD 1 TO CK WD CT
OC79 0 C216           LD 2 22          GET PATTERN WD
OC7A 0 F700 0000      MRC23 EDR L3 0      CMPARE WITH DATA
OC7C 1 4420 OC89      BSI L MRC09,Z      BRANCH # ND CMPARE
OC7E 0 7301           MDX 3 1          DECR IX 3
OC7F 0 70F5           MDX MRC06          LDDP
*
*                      ALL WORDS ARE CHECKED
*
OC80 1 6700 0974      MRC0C LDX L3 MTTWD      IX3#ADRS COMMON T8L
OC82 0 6500 0000      MRTER LDX L1 0      RESTDRE IX 1
*
OC84 0 1010           SLA 16          ZERD ACCUM
OC85 0 D400 0133      STD L CKCR      CLEAR INT IGNORE
OC87 0 4F80 002C      BSC 13 44      EXIT      SX
*
*                      DATA DID NOT CMPARE
*
OC89 0 0000          MRC09 DC 0          GD SET INT IGNORE      SRC
OC8A 1 4400 09E6      BSI L INTIG      INCR ERRDR SW
OC8C 1 7401 0AD7      MDX L RDT8A,1
OC8E 0 1000           NOP
OC8F 0 C700 0000      PATWD LD L3 0      GET WD IN ERRDR
OC91 0 D217           STD 2 23          SAVE
OC92 0 690D           STX 1 MRTE1&1      SAVE IX 1
OC93 0 680E           STX 3 MRC0F&1      SAVE IX 3
OC94 1 6700 0974      LDX L3 MTTWD      IX 3#ADR COMMON T8L
OC96 0 6500 0000      MRC08 LDX L1 0      RESTDRE IX 1
OC98 0 C0D5           LD MRCXC          GET WD CT FDR CK
OC99 0 D20B           STD 2 11          SET IN DST
OC9A 0 4308           BSI 3 11          GD TO PRINT VIA MER      SRC
OC9B 0 E007           DC /E007          ID 07
OC9C 0 0001           MRC0A DC /0001      LINE 0 FDRM 1
OC9D 0 C00C           LD MRCX5          GET NOT LINE 0
OC9E 0 D0FD           STD MRC0A
OC9F 0 6500 0000      MRTE1 LDX L1 0      RESTDRE IX 1
OCA1 0 6700 0000      MRC0F LDX L3 0      RESTDRE IX 3
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

PART NO. 2196370
PAGE 11A

```
OCA3 1 C400 0802      LD L SW0      GET SW FNC 0
OCA5 0 1805           SRA 5          IS SW 10 DN
OCA6 0 4804           BSC E          YES
OCA7 0 7CD8           MDX MRC0C      RETURN
OCA8 1 4C80 OC89      BSC I MRC09
*
*                      CDNSTANT
*
OCAA 0 8001          MRCX5 DC /8001      LINE NDT 0
* *** ***/
*
*                      RDUTINE TO SET UP FDR
*                      PRINT
*
* *** ***/
*
OCAF 0 7005          MLGE LD 3 8      GET RETURN      SE
OCB0 0 0000          STD MERF      SAVE
OCB1 0 C30B          LD 1 36          GET DNE
OCB2 0 D0FD          MLG03 STD 1 21      SET IN LDG/ERRDR SW
OCB3 0 1010          MDX MER14      GD TO COMMON PDRIDN
OCB4 0 70F9          MERF DC 0      RETURN STDRAGE
* *** ***/
*
OCB5 0 C116          MER1E LD 3 11      GET RETURN
OCB6 0 D02D          STD MERF      SAVE
OCB7 0 C21C          SLA 16
OCB8 1 D400 0800      MDX MLG03
OCBA 1 6780 0800
OCBC 1 C700 0A48
OCBE 1 D400 0801
OCC0 1 6780 0CE4
OCC2 1 C480 0CB0
OCC4 0 D302
OCC5 1 7401 OC80
OCC7 1 C480 0CB0
OCC9 0 D01A
OCCA 1 7401 OC80
OCCC 0 C0E3
OCCD 0 D117
OCCE 0 C015
OCCF 0 1808
OCDO 0 1008
OCD1 0 D300
*
*                      COMMON PDRIDN
*
MER14 LD 1 22      GET MSG ADR
STD MERX3      SAVE
LD 2 2B      GET RTN NUMBER
STD L RID      SAVE
LDX I3 RID      IX 3 # RTN
LD L3 MDNXB      GET RDUTINE ADRS
STD L RAD      SAVE
LDX I3 MERX3      IX 3 # MSG ADRS
LD I MERF      GET MSG ID
STD 3 2      SET IN MSG
MDX L MERF,1      &1 TO RETURN
LD I MERF      GET LINE ND/FDRM ND
STD MERX3      SAVE
MDX L MERF,1      &1 TO RETURN
LD MERF      GET RETURN
STD 1 23      SAVE
LD MERX3      GET LINE/FDRM ND
SRA 8      SAVE LINE
SLA 8
STD 3 0      STDRE LINE IN MSG
*
*                      CHECK FDRM
*
OCD2 0 C011          LD MERX3      GET LINE/FDRM
OCD3 0 1008          SLA 8      SAVE FDRM
OCD4 0 1808          SRA 8
OCD5 0 800D          A MERO5      ADD TBL ADR
OCD6 0 D001          STD MER11&1
OCD7 0 4C80 0000      MER11 BSC I 0
*
*                      FDRM TABLE
*
OCD9 1 0CE5          MERO4 DC MERO3      FDRM 0
OCDA 1 0D0A          DC MERO6      1
OCDB 1 0D17          DC MERO7      2
OCDC 1 0D21          DC MERO8      3
OCDD 1 0D24          DC MERO9      4
OCDE 1 0D2B          DC MER12      5
```


IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

```
DD49 0 C3D0          LD      3 0      GET LINE NO      80716360
DD4A 1 F400 0974     EOR      L MTTWO  SET WD CT # 2    80716370
DD4C 0 D300          STO      3 0      SAVE             80716380
DD4D 0 709A          MDX      MER01    GO PRINT         80716390
*
*          BUSY RETURNS
*
DD4E 0 412E          MERYD BSI  1 46    SET IX 3          SRC 80716400
DD4F 0 4323          BSI      3 35    SET MLSCF ENTRY    SRC 80716410
DD5D 1 DCF5          DC        MERY1    GO TO DIAG MON START* 80716420
*****
DD51 0 4338          BSI      3 56    GO TO DIAG MON START* 80716430
*****
*          DR 0 MSG
*
DD52 0 00DD          MERXD DC      0      LINE NO/WD CT    0    80716440
DD53 0 0000          DC        0      HEX/DEC SW          1    80716450
DD54 0 0000          DC        0      MSG ID              2    80716460
*
*          OC      0      UNIT NUMBER      3    80716470
DD55 0 0000          OC      0      MOD 0              4    80716480
DD56 0 0000          OC      0      MOD 1              5    80716490
DD57 0 0000          DC      0      MOD 2              6    80716500
DD58 0 0000          DC      0      MOD 3              7    80716510
DD59 0 0000          OC      0      MOD 4              8    80716520
DD5A 0 0000          DC      0      MOD 5              9    80716530
DD5B 0 0000
*
*          OR 1 MSG
*
DD5C 0 0000          MERX1 DC      0      LINE NO/WD CT    0    80716540
DD5D 0 0000          OC      0      HEX/DEC SW          1    80716550
DD5E 0 0000          DC      0      MSG ID              2    80716560
*
*          OC      1      UNIT NUMBER      3    80716570
DD5F 0 0001          OC      0      MOD 0              4    80716580
DD60 0 0000          OC      0      MOD 1              5    80716590
DD61 0 0000          OC      0      MOD 2              6    80716600
DD62 0 0000          DC      0      MOD 3              7    80716610
DD63 0 0000          OC      0      MOD 4              8    80716620
DD64 0 0000          OC      0      MOD 5              9    80716630
DD65 0 0000
*
*          LOOP ON ERROR ENTRIES
*
DD66 0 4323          MERLO BSI  3 35    GO SET MLSCF ENTRY    SRC 80716640
DD67 1 0A2D          OC      MON09
DD68 0 1010          MERL1 SLA  16      ZERO ACCUM          80716650
DD69 1 D400 08CC     STO      L ACMT    SET IN DR SEL      80716660
DD6B 0 021A          STO      2 26    SET IN DR BUSY SW    80716670
DD6C 0 D21B          STO      2 27    SET IN DR AVAL SW    80716680
DD6D 0 4351          BSI      3 81    GO RELEASE DEVICE    SRC 80716690
*****
DD6E 0 4338          BSI      3 56    GO TO DIAG MON START* 80716700
*****
*          ROUTINE TO SET I/O AREA
*
* *****
DD6F 0 C20F          MRSCE LO      2 15    GET WD CT          SE 80716710
DD70 0 0001          STO      MRSCL1
DD71 0 6700 0000     MRSCL1 LOX  L3 0      IX 3 # WD CT      80716720
DD73 1 C480 09A3     LO      I MRSC    GET DATA WD        80716730
DD75 1 0700 09D1     MRSCL2 STO  L3 10A   SET IN I/O AREA   80716740
DD77 0 73FF          MOX      3 -1     DECR IX 3           80716750
DD78 0 70FC          MDX      MRSCL2    LOOP              80716760
*
*          ROUTINE TO SET I/O AREA
*
* *****
```

PART NO. 2196370

PAGE 13

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

```
OD79 1 7401 09A3     MOX      L MRSC,1    &1 TO RETURN      80717040
OD7B 0 412E          BSI      1 46    SET IX 3          SRC 80717050
OD7C 1 4C80 D9A3     BSC      I MRSC    RETURN          SX 80717060
*          *****
*          ROUTINE TO SAVE DRIVE
*          SELECTION FOR USE BY THE
*          INTERRUPT ROUTINE
*
* *****
OD7E 0 C35A          STACE LD      3 90    GET RETURN          SE 80717130
OD7F 0 D10E          STO      1 14    SAVE              80717140
OD8D 1 C400 08CC     STAC1 LD      L ACMT    GET DR SEL      80717150
OD82 1 4C20 008A     BSC      L STAC2,Z  BRANCH # NOT CLEAR 80717160
OD84 0 C201          LD        2 1      GET AREA CODE    80717170
OD85 0 F125          EOR      1 37    SET DRIVE SEL      80717180
OD86 1 D40D 08CC     STO      L ACMT    SET DRIVE SEL      80717190
OD88 0 4D80 000E     BSC      I1 14    EXIT              SX 80717200
*
*          ENTRY NOT CLEAR-SET RETURN
*
OD8A 0 4323          STAC2 BSI  3 35    GO SET MLSCF ENTRY    SRC 80717210
OD8B 1 0080          OC      STAC1
*****
OD8C 0 4338          BSI      3 56    GO TO DIAG MON START* 80717220
*****
*          ROUTINE TO REQUEST DEVICE
*
* *****
OD8D 0 C35A          MTRIE LO      3 84    GET RETURN          SE 80717230
OD8E 0 D12B          STO      1 43    SAVE              80717240
OD8F 1 C400 0815     MTRIE LO      L EOIT    GET ODEF          80717250
OD91 0 4828          BSC      &Z    IS ODEF REQUESTED 80717260
OD92 0 7000          MDX      MTBSY    YES              80717270
OD93 0 C124          LO        1 36    GET A XTNT OF ONE 80717280
OD94 1 0400 0818     STO      L INTSW    SET IO SW TO ON 80717290
*****
OD96 0 4480 0131     BSI      I REQOV    REQUEST DEVICE      * 80717300
OD98 1 00A0          DC      MTBSY    BUSY RETURN          * 80717310
OD99 1 0815          DC      EOIT    AORS OF DDEF          * 80717320
OD9A 1 0819          OC      MTIO    AORS OF OVA          * 80717330
OD9B 1 080E          DC      TERM    AORS TERMINATOR    * 80717340
*****
OD9C 0 412E          MTRIE2 BSI  1 46    SET IX 3          SRC 80717350
OD9D 0 435A          BSI      3 90    GO SET OR SEL      SRC 80717360
OD9E 0 4D80 002B     BSC      I1 43    EXIT              SX 80717370
*
*          DEVICE IS BUSY
*
ODAA 0 412E          MTRSY BSI  1 46    SET IX 3          SRC 80717380
ODAI 0 4323          BSI      3 35    GO SET MLSCF ENTRY    SRC 80717390
ODAA 1 008F          DC      MTRIE1
*****
ODAA 0 4338          BSI      3 56    GO TO DIAG MON START* 80717400
*****
*          ROUTINE TO RELEASE DEVICE
*
* *****
ODAA 0 C351          MTRLE LO      3 81    GET RETURN          SE 80717410
ODAA 0 D12C          STO      1 44    SAVE              80717420
ODAA 1 C400 0815     LD      L EOIT    GET DOEF          80717430
ODAA 0 4810          BSC      -      IS ODEF REQUESTED 80717440
ODAA 0 7004          MOX      MTRL2    NO              80717450
*****
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 13

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 13A

2400 FUNCTION TEST

```
ODAA 0 4480 0132 MTRL1 BSI I RELDV RELEASE DEVICE * 80717720
ODAC 1 0815 DC EDIT ADRS OF DDEF * 80717730
ODAD 1 080E DC TERM ADRS TERMINATOR * 80717740
***** 80717750
ODAE 0 412E MTRL2 BSI 1 46 SET IX 3 SRC 80717760
ODAF 0 4D80 002C BSC 11 44 EXIT SX 80717770
* 80717780
* 80717790
* *** ** ROUTINE TO SET INTERNAL 80717800
* INTRPT IGNRE IN MONITOR 80717810
* 80717820
* 80717830
* *** ** 80717840
INTIE LD L TERM&5 GET ONLINE IND 80717850
BSC 1 INTIG&Z BR IF NOT ZERO 80717860
LD L PID GET PROG ID 80717870
STO L CKCR SET IN MONITOR 80717880
BSC I INTIG EXIT SX 80717890
* 80717900
* 80717910
* *** ** 80717920
* 80717930
* 80717940
* 80717950
* 80717960
* *** ** 80717970
FO1AA BSI 3 17 GO REWIND SRC 80717980
BSI 3 76 ROUTINE EXIT 80717990
* *** ** 80718000
* 80718010
* 80718020
* 80718030
* 80718040
* 80718050
* 80718060
* *** ** 80718070
FO2AA BSI 3 17 GO REWIND SRC 80718080
FO2AB BSI 3 53 GO TO SET UP RTN 2 SRC 80718090
BSI 3 47 GO SET I/O AREA SRC 80718100
FO2X2 DC /FFFF 80718110
BSI 3 23 GO WRITE SRC 80718120
LD 2 7 IS DR AT TM 80718130
BSC Z 80718140
BSI 3 76 YES - ROUTINE EXIT 80718150
BSI 3 14 GO BACKSPACE SRC 80718160
BSI 3 47 GO SET I/O AREA SRC 80718170
DC 0 80718180
LD FO2X2 GET PATTERN 80718190
STO 2 22 SET IN DST 80718200
BSI 3 20 GO READ SRC 80718210
DC 2 80718220
* 80718230
BSI 3 35 GO SET MLSCF ENTRY SRC 80718240
DC FO2AB 80718250
FO2AD SLA 16 ZERO ACCUM 80718260
STO 2 27 SET IN DR AVAL SW 80718270
***** 80718280
BSI 3 56 GO TO DIAG MON START* 80718290
***** 80718300
* *** ** 80718310
* 80718320
* 80718330
* 80718340
* 80718350
* 80718360
* 80718370
* 80718380
* 80718390
* *** **
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 14

2400 FUNCTION TEST

```
ODD1 0 1010 F03AA SLA 16 RTN 3 ENTRANCE 80718400
ODD2 0 7001 MDX F03AB GD TO COMMON RTN 80718410
* *** ** 80718420
* 80718430
* 80718440
* 80718450
* 80718460
* 80718470
* 80718480
* 80718490
* *** ** 80718500
F04AA LD 1 36 RTN 4 ENTRANCE 80718510
* *** ** 80718520
F03AB STO 1 24 SAVE 80718530
BSI 3 17 GO REWIND SRC 80718540
F04AE BSI 3 53 GO TO SET UP RTN 2 SRC 80718550
LD 1 24 GET RTN SW 80718560
STO F04AJ&1 SET 80718570
F04AJ LD L 0 IX 3 # 0 OR 1 80718580
LD L3 F04X2 GET PATRN ADDRS 80718590
STO F04AB&1 SET 80718600
LDX 3 -18 80718610
STX 2 F04AD&1 SAVE IX 2 80718620
LDX 2 -9 80718630
F04AB LD L2 0 GET WORD 80718640
STO L3 IOA&20 SET IN I/D AREA 80718650
MDX 2 1 DECR IX 2 80718660
MDX F04AC 80718670
LDX 2 -9 RELDAD IX 2 80718680
F04AC MDX 3 1 DECR IX 3 80718690
MDX F04AB LODP 80718700
BSI 1 46 SET IX 3 SRC 80718710
F04AD LDX L2 0 RESTORE IX 2 80718720
LD L SWO GET SW FNC 0 80718730
SLA 7 80718740
BSC L F04AN,- BRANCH # NOT CRC CK 80718750
LD MTFZ GET F7FD 80718760
STO 2 10 SET AS REC NO 80718770
F04AN BSI 3 23 GO WRITE SRC 80718780
LD 2 7 GET TM SW 80718790
BSC Z IS DRIVE AT EOT 80718800
MDX F04AF YES 80718810
BSI 3 35 GO SET MLSCF ENTRY SRC 80718820
DC F04AE 80718830
F04BO SLA 16 ZERD ACCUM 80718840
STO 2 27 SET IN DR AVAL SW 80718850
***** 80718860
BSI 3 56 GO TO DIAG MON-START* 80718870
***** 80718880
F04AF SLA 16 80718890
STD 2 27 SET IN DR AVAL SW 80718900
BSI 3 17 GO REWIND SRC 80718910
F04AG BSI 3 53 GO TO SET UP RTN 2 SRC 80718920
BSI 3 47 GO SET I/O AREA SRC 80718930
DC 0 80718940
LD 1 24 GET RTN SW 80718950
STO F04AK GET FORMAT NO 80718960
BSI 3 20 GO READ SRC 80718970
F04AK DC 0 80718980
* 80718990
LD 2 4 GET TM SW 80719000
BSC Z WAS TM READ 80719010
MDX F04AH YES 80719020
BSI 3 35 GO SET MLSCF ENTRY SRC 80719030
DC F04AG 80719040
MDX F04BO 80719050
* 80719060
F04AH LD L SWO GET SW FNC 0 80719070
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 14A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

PART NO. 2196370
PAGE 15

```
0E0F 0 1007      SLA      7
0E10 0 4828      8SC      &Z      IS RD ONLY SW ON
0E11 0 70E8      MDX      F04AF    YES
0E12 0 434C      F04AM BSI  3 76    ROUTINE EXIT
*
*              CONSTANTS
*
0E13 1 0E27      F04X2 DC      MTFZ&9  PATTERN ADRS
0E14 1 0E1E      DC      MTF1&9
* *** **
*
*              FLOATING ONE PATTERN
* *** **
*
0E15 0 08D2      MTF1  DC      /D802    FLOATING ONE PATTERN
0E16 0 8040      DC      /8040
0E17 0 2000      DC      /2000
0E18 0 1001      DC      /1001
0E19 0 0408      DC      /0408
0E1A 0 0280      DC      /0280
0E18 0 4020      DC      /4020
0E1C 0 C010      DC      /0010
0E1D 0 0104      DC      /0104
* *** **
*
*              FLOATING ZERO PATTERN
* *** **
*
0E1E 0 F7FD      MTFZ  DC      /F7FD    FLOATING ZERO PATTERN
0E1F 0 7F8F      DC      /7F8F
0E20 0 DFFF      DC      /DFFF
0E21 0 EFFE      DC      /EFFE
0E22 0 F8F7      DC      /F8F7
0E23 0 FD7F      DC      /FD7F
0E24 0 BFDF      DC      /8FDF
0E25 0 FFEF      DC      /FFEF
0E26 0 FEF8      DC      /FEF8
* *** **
*
*              ROUTINE NUMBER 5
*              WRITE TO EOT-REWIND
*              READ TO EOT
*              8 WORDS PER RECORD
*              ALL ZERO PATTERN
*
0E27 0 101D      F05AA SLA      16
0E28 0 7001      MDX      F05AB
* *** **
*
*              ROUTINE NUMBER 6
*              WRITE TO EOT-REWIND
*              READ TO EOT
*              8 WORDS PER RECORD
*              ALT ONES PATTERN
*
0E29 0 C124      F06AA LD      1 36
* *** **
*
0E2A 0 D119      F05AB STO      1 25    SAVE
0E2B 0 4311      BSI      3 17    GO REWIND
0E2C 0 4335      F06AB BSI      3 53    GO TO SET UP RTN 2
0E2D 0 C342      LD      3 66    GET WC # 8
0E2E 0 D20F      STO      2 15    SET IN DST
0E2F 0 C119      LD      1 25    GET RTN SW
0E30 0 D001      STO      F06AG&1
0E31 0 6700 0000 F06AG LDX      L3 0
0E33 1 C700 0E58 LD      L3 F06X2
```

```
80719080
80719090
80719100
80719110
80719120
80719130
80719140
80719150
80719160
80719170
80719180
80719190
80719200
80719210
80719220
80719230
80719240
80719250
80719260
80719270
80719280
80719290
80719300
80719330
80719340
80719350
80719360
80719370
80719380
80719390
80719400
80719410
80719420
80719430
80719440
80719450
80719460
80719470
80719480
80719490
80719500
80719510
80719520
80719530
80719540
80719550
80719560
80719570
80719580
80719590
80719600
80719610
80719620
80719630
80719640
80719650
80719660
80719670
80719680
80719690
80719700
80719710
80719720
80719730
80719740
80719750
80719760
80719770
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

2400 FUNCTION TEST

PART NO. 2196370
PAGE 15A

```
DE35 0 412E      BSI      1 46    SET IX 3
DE36 0 D001      STO      F06AH
DE37 0 432F      BSI      3 47    GO SET I/O AREA
DE38 0 0000      F06AH DC      0
DE39 0 4317      BSI      3 23    GO WRITE
DE3A 0 C207      LD      2 7    GET TM SW
DE3B 0 4820      BSC      Z      IS DR AT EOT
DE3C 0 7005      MDX      F06AC    YES
DE3D 0 4323      BSI      3 35    GO SET MLSCF ENTRY
DE3E 1 0E2C      DC      F06AB
DE3F 0 1010      F06AF SLA      16    ZERO ACCUM
DE40 0 D21B      STO      2 27    SET IN DR AVAL SW
*****
DE41 0 4338      BSI      3 56    GO TO DIAG MON-START*
*****
DE42 0 1010      F06AC SLA      16
DE43 0 D21B      STO      2 27    SET IN DR AVAL SW
DE44 0 4311      BSI      3 17    GO REWIND
DE45 0 4335      F06AD BSI      3 53    GO TO SET UP RTN 2
DE46 0 C342      LD      3 66    GET WC # 8
DE47 0 D20F      STO      2 15    SET IN DST
DE48 0 432F      BSI      3 47    GO SET I/O AREA
DE49 0 0000      DC      0
DE4A 0 C119      LD      1 25    GET RTN SW
DE4B 0 D001      STO      F06AJ&1    SAVE
DE4C 0 6700 0000 F06AJ LDX      L3 0
DE4E 1 C700 0E58 LD      L3 F06X2    GET PATTERN
DE50 0 D216      STO      2 22    SET IN DST
DE51 0 412E      BSI      1 46    SET IX 3
DE52 0 4314      BSI      3 20    GO READ
DE53 0 C002      DC      2
DE54 0 C204      LD      2 4    GET TM SW
DE55 0 4820      BSC      Z      IS DR AT TM
DE56 0 7003      MDX      F06AE    YES
*
DE57 0 4323      BSI      3 35    GO SET MLSCF ENTRY
DE58 1 0E45      DC      F06AD
DE59 0 7CE5      MDX      F06AF
*
DE5A 0 434C      F06AE BSI      3 76    ROUTINE EXIT
*
*              CONSTANTS
*
DE5B 0 0000      F06X2 DC      0
DE5C 0 A943      DC      /A943
* *** **
*
*              ROUTINE NUMBER 7
*              CHAINING TEST
*
DE5D 0 4332      F07AA BSI      3 50    GO TO SET UP RTN 1
DE5E 0 432F      BSI      3 47    GO SET I/O AREA
DE5F 0 FFFF      DC      /FFFF
DE60 0 C028      LD      F07X1    GET 4008
DE61 0 D35E      STO      3 94    SET IN T8L 2
DE62 0 C343      LD      3 67    GET I/O ADRS
DE63 0 D35D      STO      3 93    SET AS CAR CK
DE64 0 D370      STO      3 112   SET AS CHAIN TO
DE65 0 C027      LD      F07X4    GET 8008
DE66 0 D367      STO      3 103   SET T8L 1 WD CT
DE67 0 C2DA      LD      2 10    GET RECORD NUMBER
DE68 0 D368      STO      3 104   SET AS FIRST DATA WD
DE69 0 C34F      LD      3 79    GET 0100
DE6A 0 D202      STO      2 2    SET SPECIAL FNC
DE6B 0 C123      LD      1 35    GET WRT FNC & MOD
DE6C 0 F201      EOR      2 1    SET AREA CODE
DE6D 0 D303      STO      3 3    SET IOCC
```

```
80719780
80719790
80719800
80719810
80719820
80719830
80719840
80719850
80719860
80719870
80719880
80719890
80719900
80719910
80719920
80719930
80719940
80719950
80719960
80719970
80719980
80719990
80720000
80720010
80720020
80720030
80720040
80720050
80720060
80720070
80720080
80720090
80720100
80720110
80720120
80720130
80720140
80720150
80720160
80720170
80720180
80720190
80720200
80720210
80720220
80720230
80720240
80720250
80720260
80720270
80720280
80720290
80720300
80720310
80720320
80720330
80720340
80720350
80720360
80720370
80720380
80720390
80720400
80720410
80720420
80720430
80720440
80720450
```

2400 FUNCTION TEST

```
OE6E 0 0B02      X10 3 2      ISSUE WRITE      80720460
OE6F 0 4375      F07B0 BSI 3 117 BUSY CK      SRC 80720470
*
*              INTERRUPT RETURN      80720480
*              80720490
*              80720500
OE70 0 4351      F07IR BSI 3 81      GD RELEASE DEVICE SRC 80720510
OE71 0 C20A      LD 2 10      GET RECORO COUNT      80720520
OE72 0 8124      A 1 36      ADD ONE      80720530
OE73 0 D20A      STO 2 10      SAVE      80720540
*              80720550
*              CK RESULTS      80720560
*              80720570
OE74 0 C219      F07AB LO 2 25      GET SENSE WD      80720580
OE75 0 1003      SLA 3      IS END TBL ON      80720590
OE76 0 4808      BSC 8      80720600
OE77 0 7003      MDX F07AE YES      80720610
OE78 0 4308      F07AD BSI 3 11      GO TO PRINT VIA MER SRC 80720620
OE79 0 E008      DC /E008      ID 08      80720630
OE7A 0 0002      DC /0002      LINE 0 - FORM 2      80720640
OE7B 0 C208      F07AE LD 2 8      GET SENSE WD      80720650
OE7C 0 1806      SRA 6      IS OP COMPLETE ON      80720660
OE7D 0 4804      BSC E      80720670
OE7E 0 7003      MDX F07AG YES      80720680
OE7F 0 4308      F07AF BSI 3 11      GO TO PRINT VIA MER SRC 80720690
OE80 0 E009      DC /E009      ID 09      80720700
OE81 0 0002      DC /0002      LINE 0 - FORM 2      80720710
OE82 0 C008      F07AG LO F07X7 GET 16      80720720
OE83 0 D20F      STO 2 15      SET AS WD CT      80720730
OE84 0 432F      BSI 3 47      GO SET I/O AREA SRC 80720740
OE85 0 0000      DC 0      80720750
OE86 0 430E      BSI 3 14      GD BACKSPACE SRC 80720760
OE87 0 C007      LD F07X2 GET PATTERN      80720770
OE88 0 D216      STO 2 22      SET IN DST      80720780
OE89 0 4314      BSI 3 20      GO READ SRC 80720790
OE8A 0 0002      DC 2      80720800
*              80720810
*              BSI 3 76      ROUTINE EXIT      80720820
*              80720830
*              CONSTANTS      80720840
*              80720850
OE8C 0 4008      F07X1 DC /4008 WC - 8 & NO EOT      80720860
OE8D 0 8008      F07X4 DC /8008 WC -8 & CHAIN & EOT      80720870
OE8E 0 0010      F07X7 DC 16 WC # 16      80720880
* *** ***/
*              COMMON SET UP ROUTINE 1      80720890
*              80720900
*              80720910
*              80720920
*              80720930
OE8F 0 C332      COMOE LD 3 50      GET RETURN SE 80720940
OE90 0 D11A      STO 1 26      SAVE      80720950
OE91 0 4329      BSI 3 41      CK DR FDR AVAIL SRC 80720960
OE92 0 4326      BSI 3 38      GD CK DR FDR BUSY SRC 80720970
OE93 0 C124      LD 1 36      80720980
OE94 0 D21A      STO 2 26      SET DR BUSY      80720990
OE95 0 4354      BSI 3 84      GD REQUEST DEVICE SRC 80721000
OE96 0 7003      MDX COMO2      80721010
* *** ***/
*              COMMON SET UP ROUTINE 2      80721020
*              80721030
*              80721040
*              80721050
OE97 0 C335      COM1E LO 3 53      GET RETURN SE 80721060
OE98 0 D11A      STO 1 26      SAVE      80721070
* *** ***/
*              80721080
*              80721090
OE99 0 4326      BSI 3 38      GO CK DR FOR BUSY SRC 80721100
OE9A 0 4329      COMO2 BSI 3 41      GO CK FOR AVAIL SRC 80721110
OE9B 0 C124      LO 1 36      80721120
OE9C 0 D21B      STO 2 27      SET DR NOT AVAIL 80721130
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319APROG IO 0807-1
PAGE 16

2400 FUNCTION TEST

```
OE9D 0 C345      LD 3 69      GET WC#40I4WC#20      80721140
OE9E 0 D35D      STO 3 93      SET IN I/O AREA      80721150
OE9F 0 C344      LD 3 68      GET WC # 20      80721160
OEAO 0 D20F      STO 2 15      SET IN DST      80721170
OEAI 0 4D80 001A BSC 11 26      EXIT SX      80721180
* *** ***/
*              ROUTINE NUMBER 8      80721190
*              COMMAND REJECT TEST      80721200
*              ISSUE COMMAND TO BUSY DR      80721210
*              80721220
*              80721230
*              80721240
* *** ***/
OEAB 0 4332      F08AA BSI 3 50      GO TO SET UP RTN 1 SRC 80721260
OEAC 0 C123      LD 1 35      GET WRT FNC & MDD      80721270
OEAD 0 F201      EOR 2 1      SET AREA CODE      80721280
OEAE 0 D305      STO 3 5      SET IOCC      80721290
OEAF 0 C103      LD 1 3      GET ERA MOO & FNC      80721300
OEAG 0 F201      EOR 2 1      SET AREA CODE      80721310
OEAH 0 D307      STO 3 7      SET IOCC      80721320
OEAI 0 C34F      LD 3 79      GET 0100      80721330
OEAB 0 D202      STO 2 2      SET FNC # 1      80721340
OEAC 0 0B04      XIO 3 4      ISSUE COMMAND      80721350
OEAD 0 AB00      D 3 0      DELAY 42 TO 82 MICSE 80721360
OEAE 0 0B06      XIO 3 6      ISSUE COMMAND      80721370
OEAF 0 4375      F08B0 BSI 3 117 BUSY CK SRC 80721380
*              80721390
*              SPECIAL INTRP RETURN      80721400
*              80721410
OEBO 0 4351      F08IR BSI 3 81      GO RELEASE DEVICE SRC 80721420
OEBI 0 C208      LD 2 8      GET SENSE WD      80721430
OEBJ 0 1002      SLA 2      80721440
OEBK 1 4C28 OEBC BSC L F08AC,Z&      80721450
OEBL 0 C219      F08AD LD 2 25      GET SPEC SENSE WD      80721460
OEBM 0 1002      SLA 2      80721470
OEBN 1 4C28 OEBC BSC L F08AC,Z& BRANCH = CMND REJ ON 80721480
OEOA 0 4308      BSI 3 11      PRINT VIA MER SRC 80721490
OEOB 0 E00A      DC /E00A IO 3A      80721500
OEOC 0 0002      DC /0002 LINE 0 - FORM 2      80721510
OEOE 0 1010      F08AC SLA 16      CLEAR A REG      80721520
OEOG 0 D219      STO 2 25      ZERO SP SENSE WD      80721530
OEOH 0 434C      BSI 3 76      ROUTINE EXIT      80721540
* *** ***/
*              ROUTINE NUMBER 9      80721550
*              COMMAND REJECT TEST      80721560
*              ISSUE COMMAND TO WRONG OR      80721570
*              80721580
*              80721590
*              80721600
* *** ***/
OEBO 0 4332      F09AA BSI 3 50      GO TO SET UP RTN 1 SRC 80721610
OECC 0 C118      LD 1 27      GET SENSE FNC & MDD      80721620
OECD 0 F201      EOR 2 1      SET AREA CODE      80721630
OEEA 0 D305      STO 3 5      SET IOCC      80721640
OEEB 0 C103      LD 1 3      GET ERA FNC & MDD      80721650
OEEC 0 F201      EOR 2 1      SET AREA CODE      80721660
OEEF 0 D307      STO 3 7      SET IDCC      80721670
OEG0 0 C350      LD 3 80      GET 0200      80721680
OEG1 0 D202      STO 2 2      SET FNC # 2      80721690
OEG2 0 0B04      XIO 3 4      ISSUE COMMAND      80721700
OEG3 0 AB00      O 3 0      DELAY 42 TO 82 MICSE 80721710
OEG4 0 0B04      XIO 3 4      ISSUE COMMAND      80721720
OEG5 0 AB00      D 3 0      DELAY 42 TO 82 MICSE 80721730
OEG6 0 0B06      XIO 3 6      ISSUE COMMAND      80721740
OEG7 0 4375      BSI 3 117 BUSY CK SRC 80721750
* *** ***/
*              80721760
*              80721770
*              80721780
*              ROUTINE NUMBER 10      80721790
*              COMMAND REJECT TEST      80721800
*              BACKSPACE INTO LOAD POINT 80721810
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319APROG IO 0807-1
PAGE 16A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TESTPART NO. 2196370
PAGE 17

```
*
* *** **
FOAAA BSI 3 17 GD REWIND SRC 80721820
      BSI 3 53 GO TO SET UP RTN 2 SRC 80721830
      BSI 3 23 GO WRITE SRC 80721840
      BSI 3 14 GD BACKSPACE SRC 80721850
      BSI 3 38 CK DR FDR BUSY SRC 80721860
      BSI 3 14 GD BACKSPACE SRC 80721870
      LD 2 10 GET REC ND 80721880
      A 1 36 ADD DNE 80721890
      STD 2 10 SAVE 80721900
      MDX F08IR GD CK RESULT 80721910
* *** **
*
* RDUTINE NUMBER 11
* CMDMND REJECT TEST
* REWIND AT LOAD POINT
*
* *** **
FOBAA BSI 3 17 GD REWIND SRC 80721920
      BSI 3 50 GD TO SET UP RTN 1 SRC 80721930
      LD 3 80 GET 0200 80721940
      STD 2 2 SET FNC TD 2 80721950
      LD 1 11 GET RWD FNC & MDD 80721960
      EDR 2 1 SET AREA CDDE 80721970
      STD 3 5 SET IDCC 80721980
      XID 3 4 ISSUE CMDMND 80721990
FOBAB BSI 3 117 BUSY CK SRC 80722000
* *** **
*
* RDUTINE NUMBER 12
* STDRAGE PROTECT TEST
*
* *** **
FOCAA LD L TERM&5 GET ONLINE IND 80722010
      BSI I EXIT,Z& BYPASS RTN IF ONLINE 80722020
*
      BSI 3 53 GD TO SETUP RTN 2 SRC 80722030
      BSI 3 47 GD SET I/O AREA SRC 80722040
FOEAB DC /FFFF
      BSI 3 23 GD WRITE SRC 80722050
      BSI 3 14 GD BACKSPACE SRC 80722060
      BSI 3 38 CK DR FDR BUSY SRC 80722070
      LD 1 36 GET DNE 80722080
      STD 2 26 SET IN DR BUSY SW 80722090
      BSI 3 84 GD REQUEST DEVICE SPC 80722100
      BSI 3 47 GD SET I/D AREA SRC 80722110
      DC 0 80722120
      LDX 3 20 80722130
FOEAC DC /2F41 STDRAGE PROTECT I/D 80722140
      DC IDA 80722150
      MDX 3 -1 DECR IX 3 80722160
      MDX F0EAC LDDP 80722170
      BSI 1 46 SET IX 3 SRC 80722180
      LD 3 80 GET 0200 80722190
      STD 2 2 SET FNC TD 2 80722200
      LD 1 34 GET READ MOD & FNC 80722210
      EDR 2 1 SET AREA CDDE 80722220
      STD 3 5 SET IDCC 80722230
      XID 3 4 ISSUE CMDMND 80722240
FOEAB BSI 3 117 BUSY CK SRC 80722250
*
*
*
*
FOEIR BSI 3 81 GD RELEASE DEVICE SRC 80722260
      LD 2 8 GET SENSE WD 80722270
      SLA 5 80722280
      80722290
```

```
OECE 0 4311
OECF 0 4335
OED0 0 4317
OED1 0 430E
OED2 0 4326
OED3 0 430E
OED4 0 C20A
OED5 0 8124
OED6 0 D20A
OED7 0 70D8
```

```
OEED 0 F201
OEDE 0 D305
OEDF 0 0B04
OEE0 0 4375
```

```
OEED 0 4335
OEE6 0 432F
OEE7 0 FFFF
OEE8 0 4317
OEE9 0 430E
OEEA 0 4326
OEEB 0 C124
OEEC 0 D21A
OEE0 0 4354
OEEE 0 432F
OEEF 0 0000
OEF0 0 6314
OEF1 0 2F41
OEF2 1 09D1
OEF3 0 73FF
OEF4 0 70FC
OEF5 0 412E
OEF6 0 C350
OEF7 0 D202
OEF8 0 C122
OEF9 0 F201
OEFA 0 D305
OEFB 0 0B04
OEF0 0 4375
```

```
OEE1 1 C400 0B13
OEE3 1 44AB 09C0
```

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319APRG ID 0807-1
PAGE 17IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TESTPART NO. 2196370
PAGE 17A

```
OF00 1 4C28 OF05 BSC L F0EAD,+Z BRANCH = SAV STDP DN 80722500
OF02 0 430B BSI 3 11 PRINT VIA MER SRC 80722510
OF03 0 E00C DC /E00C IO 3C 80722520
OF04 0 0002 DC /0002 LINE 0 - FORM 2 80722530
OF05 0 6314 F0EAD LDX 3 20 80722540
OF06 1 C700 09D1 F0EAE LD L3 IDA GET PROTECTED WORD 80722550
OF08 0 4820 BSC Z WAS WD OESTRDYED 80722560
OF09 0 7010 MDX F0EAL YES 80722570
OF0A 0 73FF MOX 3 -1 DECR IX 3 80722580
OF0B 0 70FA MOX F0EAE 80722590
OF0C 0 6314 F0EAF LDX 3 20 80722600
OF00 0 2F40 F0EAM DC /2F40 CLEAR STDRAGE PRCT 80722610
OF0E 1 09D1 DC IDA 80722620
OF0F 0 73FF MDX 3 -1 DECR IX 3 80722630
OF10 0 70FC MDX F0EAM LDDP 80722640
OF11 0 412E BSI 1 46 SET IX 3 SRC 80722650
OF12 0 C208 LD 2 8 GET SENSE WORD 80722660
OF13 0 1804 SRA 4 80722670
OF14 0 4804 BSC E IS WRDNG LENGTH REC 80722680
OF15 0 7003 MDX F0EAK YES 80722690
OF16 0 430B BSI 3 11 GD TO PRINT VIA MER SRC 80722700
OF17 0 E00B DC /E00B ID 0B 80722710
OF18 0 0002 DC /0002 LINE 0 - FDRM 2 80722720
OF19 0 434C F0EAK BSI 3 76 ROUTINE EXIT 80722730
*
*
*
*
OF1A 1 C700 09D1 F0EAL LD L3 IDA GET DESTROYED WD 80722740
OF1C 0 D205 STD 2 5 SET IN DST 80722750
OF1D 0 1010 SLA 16 ZERD ACCUM 80722760
OF1E 0 D206 STD 2 6 SET IN DST 80722770
OF1F 0 412E BSI 1 46 SET IX 3 SRC 80722780
OF20 0 430B BSI 3 11 GD TO PRINT VIA MER SRC 80722790
OF21 0 E00D DC /E00D ID 0D 80722800
OF22 0 0007 DC /0007 LINE 0 - FDRM 7 80722810
OF23 0 70E8 MDX F0EAF 80722820
* *** **
*
* RDUTINE NUMBER 13
* PRDGRAM STDP TEST
*
* *** **
FODAA BSI 3 53 GD TO SET UP RTN 2 SRC 80722830
      BSI 3 23 GD WRITE SRC 80722840
      BSI 3 14 GD BACKSPACE SRC 80722850
      BSI 3 38 CK DR FDR BSY SRC 80722860
      LD 1 36 GET DNE 80722870
      STD 2 26 SET DR BUSY SW 80722880
      BSI 3 84 REQ DEVICE SRC 80722890
      LD 3 80 GET 0200 80722900
      STD 2 2 SET FNC # 2 80722910
      LD 1 34 GET RD FNC & MOD 80722920
      EDR 2 1 SET AREA CDDE 80722930
      STD 3 5 SET IDCC 80722940
      LD 1 28 GET PRDG STDP FNC&MD 80722950
      EDR 2 1 SET AREA CDDE 80722960
      STD 3 7 SET IDCC 80722970
      LO F0FX1 GET WD CT # 16383 80722980
      STD 3 93 SET IN I/D AREA 80722990
      LD 1 13 GET SENSE FNC & MOD 80723000
      EDR 2 1 SET AREA CDDE 80723010
      EDR F0FX4 SET WD CTR BIT 80723020
      STD 3 3 SET IDCC 80723030
      XID 3 4 ISSUE CMDMND 80723040
      XID 3 2 SENSE WD CTR 80723050
      STD F0FX2 SAVE 80723060
      XID 3 6 ISSUE CMDMND 80723070
FOFAC BSI 3 117 BUSY CK SRC 80723080
*
FOFIR BSI 3 81 GD RELEASE DEVICE SRC 80723090
      80723100
      80723110
      80723120
      80723130
      80723140
      80723150
      80723160
      80723170
```

```
OF24 0 4335
OF25 0 4317
OF26 0 430E
OF27 0 4326
OF28 0 C124
OF29 0 D21A
OF2A 0 4354
OF2B 0 C350
OF2C 0 D202
OF2D 0 C122
OF2E 0 F201
OF2F 0 D305
OF30 0 C11C
OF31 0 F201
OF32 0 D307
OF33 0 C01E
OF34 0 D35D
OF35 0 C10D
OF36 0 F201
OF37 0 F01D
OF38 0 D303
OF39 0 0B04
OF3A 0 0B02
OF3B 0 D017
OF3C 0 0B06
OF3D 0 4375
```

OF3E 0 4351

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319APRG ID 0807-1
PAGE 17A

2400 FUNCTION TEST

```
OF3F 0 C208      LD      2 8      GET SENSE WD      80723180
OF40 0 1804      SRA      4      80723190
OF41 0 4804      BSC      E      IS WRONG LGTH REC  80723200
OF42 0 7003      MDX      FOFAB   YES              80723210
OF43 0 4308      BSI      3 11     GO TO PRINT VIA MER SRC 80723220
OF44 0 E00E      DC      /E00E   ID OE              80723230
OF45 0 0000      DC      /0000   LINE 0-FORM 0      80723240
OF46 0 C00C      FOFAB LD      FOFX2 GET WD CTR      80723250
OF47 0 F00C      EOR      FOFX3   80723260
OF48 0 4818      BSC      6-      WAS WD CTR CORRECT 80723270
OF49 0 434C      FOFAD BSI      3 76 YES ROUTINE EXIT 80723280
OF4A 0 C009      LD      FOFX3   GET WD CT EXPECTED 80723290
OF4B 0 D206      STD      2 6     SET IN DST        80723300
OF4C 0 C006      LD      FOFX2   GET WD CT REC       80723310
OF4D 0 D205      STD      2 5     SET IN DST        80723320
OF4E 0 4308      BSI      3 11     GO TO PRINT VIA MER SRC 80723330
OF4F 0 E015      DC      /E015   ID 15              80723340
OF50 0 0006      DC      /0006   LINE 0 FORM 6      80723350
OF51 0 70F7      MDX      FOFAD   80723360
*               80723370
*               80723380
*               80723390
*               80723400
*               80723410
*               80723420
*               80723430
*               80723440
*               80723450
*               80723460
*               80723470
*               80723480
*               80723490
*               80723500
*               80723510
*               80723520
*               80723530
*               80723540
*               80723550
*               80723560
*               80723570
*               80723580
*               80723590
*               80723600
*               80723610
*               80723620
*               80723630
*               80723640
*               80723650
*               80723660
*               80723670
*               80723680
*               80723690
*               80723700
*               80723710
*               80723720
*               80723730
*               80723740
*               80723750
*               80723760
*               80723770
*               80723780
*               80723790
*               80723800
*               80723810
*               80723820
*               80723830
*               80723840
*               80723850

CONSTANTS
FOFX1 DC      16383   WD COUNT
FOFX2 DC      0      TEMP STORAGE
FOFX3 DC      /C000   EXPECTED WD CT
FOFX4 DC      /0010   SNSE WD CTR BIT
* *** **
ROUTINE 17
* *** **
F11AA LD      1 36     GET ONE
* *** **
MOX      F10B0
* *** **
ROUTINE NUMBER 14
WRONG LENGTH RECORD TEST
READ 1 MDRE WDRO THAN WRTN
* *** **
FOEAA SLA      16     ZERD ACCUM
F10B0 STD      1 41   SAVE RTN SW
* *** **
BSI      3 53        GO TO SET UP RTN 2 SRC
* *** **
BSI      3 23        GO WRITE SRC
* *** **
BSI      3 14        GO BACKSPACE SRC
* *** **
BSI      3 38        CK DR FOR BUSY SRC
* *** **
LD      1 36        GET ONE
* *** **
STD      2 26        SET IN DR BUSY SW
* *** **
BSI      3 84        GO REQUEST DEVICE SRC
* *** **
LD      1 41        GET RTN SW
* *** **
STD      F10B1&1    SAVE
* *** **
F10B1 LDX      L3 0   IX 3 # RTN SW
* *** **
LD      L3 F10X4     GET ADD DR SUB
* *** **
STD      F10AF
* *** **
BSI      1 46        LD IX 3 SRC
* *** **
LD      3 69        GET WC#4014WC#20
* *** **
F10AF A      1 36    ADD DR SUB
* *** **
STD      3 93        SET IN I/O AREA
* *** **
LD      3 80        GET 0200
* *** **
STD      2 2         SET FNC # 2
* *** **
LD      1 34        GET READ MOD & FNC
* *** **
EOR      2 1         SET AREA CODE
* *** **
STD      3 5         SET IOCC
* *** **
XID      3 4         ISSUE COMMAND
* *** **
F10AB BSI      3 117  BUSY CK SRC
*
*
*
```

```
OF52 0 3FFF
OF53 0 0000
OF54 0 C000
OF55 0 0010
```

```
OF56 0 C124
OF57 0 7001
```

```
OF58 0 1010
OF59 0 D129
OF5A 0 4335
OF5B 0 4317
OF5C 0 430E
OF5D 0 4326
OF5E 0 C124
OF5F 0 D21A
OF60 0 4354
OF61 0 C129
OF62 0 0001
OF63 0 6700 0000
OF65 1 C700 OF90
OF67 0 D002
OF68 0 412E
OF69 0 C345
OF6A 0 8124
OF6B 0 D35D
OF6C 0 C350
OF6D 0 D202
OF6E 0 C122
OF6F 0 F201
OF70 0 D305
OF71 0 0804
OF72 0 4375
```

2400 FUNCTION TEST

```
OF73 0 4351      *
OF74 0 C208      F10IR BSI      3 81   GO RELEASE DEVICE SRC 80723870
OF75 0 1804      LD      2 8      GET SENSE WD      80723880
OF76 0 4804      SRA      4      80723890
OF77 0 7003      BSC      E      IS WRONG LGTH REC  80723900
OF78 0 4308      MDX      F10AC   YES              80723910
OF79 0 E00F      BSI      3 11     GO TO PRINT VIA MER SRC 80723920
OF7A 0 0002      DC      /E00F   ID OF              80723930
OF7B 0 C129      F10AC LD      1 41   LINE 0 - FORM 2 80723940
OF7C 0 D001      STD      F10AC&3 GET RTN SW      80723950
OF7D 0 6700 0000 LDX      L3 0     SAVE              80723960
OF7E 0 C205      LD      2 5     IX 3 # RTN SW      80723970
OF80 1 F700 OF8D EOR      L3 F10X2 GET WD CT        80723980
OF82 1 4C18 OF88 BSC      L F10AD,++ IS IT # EXPECTED 80723990
OF84 1 C700 OF8D LD      L3 F10X2 BRANCH= WD CT CRCT 80724000
OF86 0 D206      STO      2 6     GET EXPCTED WD CT 80724010
OF87 0 412E      BSI      1 46    SAVE              80724020
OF88 0 4308      BSI      3 11    RESTORE IX 3      SRC 80724030
OF89 0 E010      DC      /E010   PRINT VIA MER      SRC 80724040
OF8A 0 0006      DC      /0006   ID 10              80724050
OF8B 0 412E      F10AD BSI      1 46 SET IX 3        SRC 80724060
OF8C 0 434C      BSI      3 76    ROUTINE EXIT      80724070
*               80724080
*               80724090
*               80724100
*               80724110
*               80724120
*               80724130
*               80724140
*               80724150
*               80724160
* *** **
ROUTINE NUMBER 15
WRT AND RD TAPE MARK TEST
* *** **
FOFAA BSI      3 53    GD TD SET UP RTN 2 SRC 80724230
* *** **
BSI      3 26        GD WRITE TAPE MARK SRC 80724240
* *** **
BSI      3 14        GD BACKSPACE SRC 80724250
* *** **
BSI      3 20        GD READ SRC 80724260
* *** **
DC      0
* *** **
LD      2 4         GET TM SW 80724270
* *** **
BSC      Z          WAS TM READ 80724280
* *** **
MDX      F11AB      YES 80724290
* *** **
BSI      3 11        GO TO PRINT VIA MER SRC 80724300
* *** **
DC      /E011       ID 11 80724310
* *** **
DC      /0002       LINE 0 -FORM 2 80724320
* *** **
F11AB LD      3 94   GET TM DATA 80724330
* *** **
EOR      1 29       CK AGAINST EXPECTED 80724340
* *** **
BSC      L F11AC,+- BRANCH = CORRECT 80724350
* *** **
LD      3 94        GET TM DATA 80724360
* *** **
STD      2 5        SAVE 80724370
* *** **
LD      1 29        GET EXPECTED TM DATA 80724380
* *** **
STD      2 6        SAVE 80724390
* *** **
BSI      3 11       PRINT VIA MER SRC 80724400
* *** **
DC      /E012       ID 12 80724410
* *** **
DC      /0007       LINE 0 - FORM 7 80724420
* *** **
F11AC BSI      3 76  ROUTINE EXIT 80724430
*               80724440
*               80724450
*               80724460
*               80724470
*               80724480
*               80724490
*               80724500
*               80724510
*               80724520
*               80724530
*               80724540

ROUTINE NUMBER 16
SEVEN TRACK FEATURE TEST
1. WRITE-BACKSPACE AND
READ AT 556 BPI,2 BYTES
PER WORD AND ODD PARITY
```

```
OF8D 0 FFFE
OF8E 0 0001
OF8F 0 0000
OF90 0 8124
OF91 0 9124
```

```
OF92 0 4335
OF93 0 431A
OF94 0 430E
OF95 0 4314
OF96 0 0000
OF97 0 C204
OF98 0 4820
OF99 0 7003
OF9A 0 4308
OF9B 0 E011
OF9C 0 0002
OF9D 0 C35E
OF9E 0 F110
OF9F 1 4C18 OFA8
OFA1 0 C35E
OFA2 0 D205
OFA3 0 C110
OFA4 0 D206
OFA5 0 4308
OFA6 0 E012
OFA7 0 0007
OFA8 0 434C
```

	*			2. WRITE - BACKSPACE AND	80724550
	*			READ AT 556 BPI,2 BYTES	80724560
	*			PER WORD AND EVEN PARITY	80724570
	*				80724580
	*			3. WRITE-BACKSPACE AND	80724590
	*			READ AT 556 BPI,3 BYTES	80724600
	*			PER WORD AND ODD PARITY	80724610
	*				80724620
	*			4. WRITE-BACKSPACE AND	80724630
	*			READ AT 556 BPI,3 BYTES	80724640
	*			PER WORD AND EVEN PARITY	80724650
	*				80724660
	*			5. BACKSPACE AND READ AT	80724670
	*			200 BPI,3 BYTES PER WORD	80724680
	*			AND EVEN PARITY	80724690
	*				80724700
	*				80724710
	*			6. WRITE-BACKSPACE AND	80724720
	*			READ AT 200 BPI, 3 BYTES	80724730
	*			PER WORD AND EVEN PARITY	80724740
	*				80724750
	* *** **				80724760
OFA9 0 4335	F10AA	BSI	3 53	GO TO SET UP RTN 2 SRC	80724770
OFAA 0 C200		LD	2 0	GET NUMBER TRACKS	80724780
OFAB 0 4818		BSC	+--	IS THIS A 7 TR DR	80724790
	*				80724800
	*				80724810
	*				80724820
OFAC 0 434C	F12AB	BSI	3 76	NO - ROUTINE EXIT	80724830
OFAD 0 C002	F12AC	LD	F12AG	CHANGE REC NO	80724840
OFAE 0 D20A		STO	2 10	SET IN DST	80724850
OFAF 0 432F		BSI	3 47	GO SET I/O AREA SRC	80724860
OFB0 0 3F30	F12AG	DC	/3F30		80724870
OFB1 0 C11E		LD	1 30	GET FNC & MOD-WRT	80724880
OFB2 0 D123		STO	1 35	SET WRT FNC & MOD	80724890
OFB3 0 C11F		LD	1 31	GET FNC & MOD -RD	80724900
OFB4 0 D122		STO	1 34	SET AS RD MOD & FNC	80724910
OFB5 0 4317	F12AO	BSI	3 23	GO WRITE SRC	80724920
OFB6 0 430E		BSI	3 14	GO BACKSPACE SRC	80724930
OFB7 0 432F		BSI	3 47	GO SET I/O AREA SRC	80724940
OFBB 0 0000		OC	0		80724950
OFB9 0 C0F6		LO	F12AG	GET PATTERN	80724960
OFBA 0 D216		STO	2 22	SET IN DST	80724970
OFBB 0 4314		BSI	3 20	GO READ SRC	80724980
OFBC 0 0002		OC	2		80724990
	*				80725000
OFBD 0 C122		LO	1 34	GET READ MOD & FNC	80725010
OFBE 0 4804		BSC	E	IS PARITY EVEN	80725020
OFBF 0 7006		MOX	F12AE	YES	80725030
OFCD 0 F124		EOR	1 36	SET 0001	80725040
OFCE 0 D122		STO	1 34	SET AS RD MOD & FNC	80725050
OFD0 0 C123		LD	1 35	GET WRT FNC & MOD	80725060
OFD3 0 F124		EOR	1 36	SET 0001	80725070
OFD4 0 D123		STO	1 35	SET WRT FNC & MOD	80725080
OFD5 0 70EF		MOX	F12AD		80725090
	*				80725100
	*			SET PARITY ODD	80725110
	*				80725120
OFDE 0 1801	F12AE	SRA	1		80725130
OFDF 0 1001		SLA	1		80725140
OFD8 0 D122		STO	1 34	SET AS RD MOD & FNC	80725150
OFD9 0 C123		LO	1 35	GET WRT FNC & MOD	80725160
OFDA 0 1801		SRA	1		80725170
OFDB 0 1001		SLA	1		80725180
OFDC 0 D123		STO	1 35	SET WRT FNC & MOD	80725190
OFDD 0 1802		SRA	2		80725200
	*	BSC	E		80725210
OFDE 0 7007		MDX	F12AF		80725220

	*				80725230
	*				80725240
	*				80725250
OFCF 0 C122	LD	1 34		GET READ MOD & FNC	80725260
OFD0 0 F346	EOR	3 70		SET 3 BYTES/WO	80725270
OF01 0 D122	STO	1 34		SET AS RD MOD & FNC	80725280
OFD2 0 C123	LD	1 35		GET WRT FNC & MOD	80725290
OFD3 0 F346	EOR	3 70		SET 3 BYTES/WO	80725300
OFD4 0 D123	STO	1 35		SET WRT FNC & MOD	80725310
OFF5 0 70DF	MDX	F12AD			80725320
	* * *				80725330
OFD6 0 430E	F12AF BSI	3 14		GO BACKSPACE SRC	80725340
OFD7 0 4326	BSI	3 38		CK DR FDP BUSY SRC	80725350
OFB8 0 C124	LD	1 36		GET ONE	80725360
OF09 0 D21A	STO	2 26		SET IN OR BUSY SW	80725370
OFDA 0 4354	BSI	3 94		GO REQ DEV SRC	80725380
OFDB 0 C120	LD	1 32		GET FNC & MOD -RO	80725390
OFDC 0 D122	STO	1 34		SET AS RO FNC & MOD	80725400
OFDD 0 F201	EOR	2 1		SET AREA CODE	80725410
OFDE 0 D305	STO	3 5		SET IOCC	80725420
OFDF 0 C350	LD	3 80		SET OZOO	80725430
OFF0 0 D202	STO	2 2		SET FNC # 2	80725440
OFF1 0 0804	XIO	3 4		ISSUE COMMAND	80725450
OFF2 0 4375	BSI	3 117		BUSY CK SRC	80725460
	* * *				80725470
	* * *				80725480
	* * *				80725490
	* * *				80725500
	* * *				80725510
	* * *				80725520
OFF3 0 4351	F12IR BSI	3 81		GO RELEASE DEVICE SRC	80725530
OFF4 0 C208	LD	2 8		GET SENSE WO	80725540
OFF5 0 E014	AND PEND			CK FOR EXPECTED	80725550
OFF6 1 4C18 OFEB	BSC L F12AK,+-			BRANCH = WD OK	80725560
OFFB 0 430B	BSI	3 11		PRINT VIA MER SRC	80725570
OFF9 0 E013	DC /EO13			ID I3	80725580
OFFA 0 0002	DC /0002			LINE 0 - FORM 2	80725590
OFFB 0 C121	F12AK LD	1 33		GET FNC & MOO-WRT	80725600
OFFC 0 D123	STO	1 35		SET WRT FNC & MOO	80725610
OFFD 0 432F	BSI	3 47		GO SET I/O AREA SRC	80725620
OFFE 0 3F30	DC /3F30				80725630
OFFF 0 4317	BSI	3 23		GO WRITE SRC	80725640
OFF0 0 430E	BSI	3 14		GO BACKSPACE SRC	80725650
OFF1 0 432F	BSI	3 47		GO SET I/O AREA SRC	80725660
OFF2 0 0000	OC	0			80725670
OFF3 0 4314	BSI	3 20		GO READ SRC	80725680
OFF4 0 0002	DC	2			80725690
	* * *				80725700
OFF5 0 C127	LD	1 39		RESTORE RD FNC & MOD	80725710
OFF6 0 D122	STO	1 34		SET AS RD MOD & FNC	80725720
OFF7 0 C128	LD	1 40		RESTORE WT FNC & MOD	80725730
OFF8 0 D123	STO	1 35		SET WRT FNC & MOD	80725740
OFF9 0 7082	MDX	F12AB			80725750
	* * *				80725760
	* * *				80725770
	* * *				80725780
OFFA 0 B0BF	PEND DC	/BOBF	EXPECTED DSU	.	80725790
OFFC OB03	ENO MTBEG				80725800
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY					

2400 FUNCTION TEST

ACMT 08CC 0824 082D 0858 08C3 0A04 0D69 0D80 0D86
AVLX1 0C42 0C35 0C38
AVL01 0C38 0C30 0C33
AVL02 0C2E 0C40
AVL03 0C3F 0C3A
BEGIN 012C 08D3
BSP 0982
BSPE 086C 0983
BSP12 0871 088D
BSP02 086E
BSP05 0877
BSP06 086F
BSYX2 0C16 08ED 08F9 08FD
BSYX3 0C17 08F2 0C04 0C08
BSY01 08F9 08EB
BSY02 0C00 08F5 08FB 0C06
BSY03 08E9 0C19 0C18
BSY04 08EE
BSY05 0C04 08F0
BSY07 0C03
BSY08 0C0A 08FF
CKAVE 0C2C 099E
CKAVL 099D
CK8SE 08E7 099B
CKBSY 099A
CKCR 0133 0C85 0087
CKDTA 0803 0AF0 0AF4 0AF7
CLTER 0CF2 0D01 0008
COM0E 0E8F 09A7
COM00 09A6
COM01 09A9
COM02 0E9A 0E96
COM03 09B0
COM1E 0E97 09AA
COM3E 0898 098E
COM3F 08A1 0889
DBINT 0892 0882
DBIN1 0899 0878 0895
DROT8 08D6 0832 0889 0C1D
DRIT8 0909 081D 08C0 0C25
DST0 0939 0834 08AF 08B5 08E9 0C1F 0C2E
DST1 0956 081F 088C 08EE 0C27 0C31
DSW 0994
DSWD 0888
DSWEN 08A7 0995
DSWX0 0888 08AF 0883 0884 0888
DSW0 08AD 08B2
DSW11 0883
DSW13 08AC 08B6
OSW8 08A9
EDIT 0815 0D8F 0D99 0DA6 0DAC
EDIT1 0816 08B3
EDIT2 0817 088A
END 012E 0A1F
EPA 0808
ERA 0991
ERAB 0A88 088C
ERAE 0A83 0992
ERRDR 0130 0CED
EXIT 09C0 0EE3
EXITE 09AF 09C1
FNCCL 088A 0870
FNCTB 0882 084F
FOAAA 0ECE 0A52
F08AA 0ED8 0A53
F08AB 0EE0
FOCAA 0EE1 0A54
FODAA 0F24 0A55

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 20

2400 FUNCTION TEST

F0EAA 0F58 0A56
F0EAB 0EE7
F0EAC 0EF1 0EF4
F0EAD 0F05 0F00
F0EAE 0F06 0F08
F0EAF 0F0C 0F23
F0EAH 0EFC
F0EAK 0F19 0F15
F0EAL 0F1A 0F09
F0EAM 0F0D 0F10
F0EIR 0EFD 08A6
F0FAA 0F92 0A57
F0FAB 0F46 0F42
F0FAC 0F3D
F0FAD 0F49 0F51
F0FIR 0F3E 08A7
F0FX1 0F52 0F33
F0FX2 0F53 0F38 0F46 0F4C
F0FX3 0F54 0F47 0F4A
F0FX4 0F55 0F37
F01AA 0D88 0A49
F02AA 0D8D 0A4A
F02AB 008E 00C0
F02AD 0DCE
F02X2 0DC0 0DC8
F03AA 0DD1 0A48
F03AB 0DD4 0DD2
F04AA 0DD3 0A4C
F04AB 0DE1 0DDD 00E9
F04AC 0DE8 0DE6
F04AD 0DE8 0DDF
F04AE 0DD6 0DF9
F04AF 0DFD 0DF7 0E11
F04AG 0E00 0E08
F04AH 0E0D 0E09
F04AJ 0DD9 0DD8
F04AK 0E06 0E04
F04AM 0E12
F04AN 0DF4 0DF0
F04B0 0DFA 0E0C
F04X2 0E13 0C56 0D08
F05AA 0E27 0A4D
F05AB 0E2A 0E28
F06AA 0E29 0A4E
F06AB 0E2C 0E3E
F06AC 0E42 0E3C
F06AD 0E45 0E58
F06AE 0E5A 0E56
F06AF 0E3F 0E59
F06AG 0E31 0E30
F06AH 0E38 0E36
F06AJ 0E4C 0E48
F06X2 0E58 0E33 0E4E
F07AA 0E5D 0A4F
F07AB 0E74
F07AD 0E78
F07AE 0E7B 0E77
F07AF 0E7F
F07AG 0E82 0E7E
F07B0 0E6F
F07IR 0E70 08A1
F07X1 0E8C 0E60
F07X2 0E5F 0E87
F07X4 0E8D 0E65
F07X7 0E8E 0E82
F08AA 0EA3 0A50
F08AC 0E8C 0EB3 0E87
F08AD 0E85

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 20A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TEST

PART NO. 2196370
PAGE 21

F0880 O EAF
F081R OEBO 08A2 08A3 08A5 0ED7
F09AA OEBF 0A51
F10AA OFA9 0A58
F10AB OF72
F10AC OF78 OF77 OF7C
F10AD OF88 OF82
F10AF OF6A OF67
F10B0 OF59 OF57
F10B1 OF63 OF62
F101R OF73 08A8 08A8
F10X2 OF8D OF80 OF84
F10X3 OF8F
F10X4 OF90 OF65
F10X5 OF91
F11AA OF56 0A59
F11AB OF9D OF99
F11AC OFA8 OF9F
F12A8 OFAC OFF9
F12AC OFAD
F12AD OFB5 OFC5 OFD5
F12AE OFC6 OF8F
F12AF OFD6 OFCE
F12AG OFB0 OFAD OFB9
F12AK OFEB OFE6
F121R OFE3 08AA
INTIE ODB1 09E7
INTIG 09E6 OC5D OC75 OC8A ODB3 ODB9
INTSW 0818 0822 0868 OD94
IOA 09D1 0976 0978 0987 0A34 OC64 OD24 OD75 ODE3 OFE2 OF06 OF0E OF1A
IOCC1 0976
IOCC2 0978
IOCC3 097A 08AD
IPA 0806
LIV0 OC18 0903
LIV1 OC1A 0936
LOG 012F OD03
LPA 0807
MER 097F
MERF OC80 OCAC OC82 OCC2 OCC5 OCC7 OCCA OCCC
MERLO OD66 OCF1
MERL1 OD68 0981
MERX0 OD52 08EC
MERX1 OD5C 091F
MERX3 OCE4 OC86 OCC0 OCC9 OCCE OCD2
MERX4 OD20 OD1D
MERX9 OD38 OD35
MERY0 OD4E OCF0 OD06
MERY1 OCF5 OD50
MERY2 OCF7 OCF6
MERY4 OCE0
MERY5 OD46 OD14
MER01 OCE8 OCF9 OD16 OD1F OD37 OD4D
MER02 OCEF OCE8
MER03 OCE5 OCD9
MER04 OCD9 OCE3
MER05 OCE3 OCD5
MER06 OD0A OCDA
MER07 OD17 OCDB
MER08 OD21 OCDC
MER09 OD24 OC44 OCDD
MER1E OC81 0980
MER10 OD19 OD23 OD27
MER11 OCD7 OCD6
MER12 OD28 OCDE
MER13 OD39 OCDF OCE0
MER14 OCB5 OCAF
MER16 OD1C OD3D

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
2400 FUNCTION TEST

PART NO. 2196370
PAGE 21A

MER17 OD3E OCE1
MER18 OD47 OCE2
MER19 OD12 OD45
MLG 097C
MLGE OCA8 097D
MLGX0 OD09 OCF8
MLG01 OCFA OCEC
MLG02 OD05 OCE9
MLG03 OCAE OC84
MLG04 OD03 OCFC
MLSCF 0809 0859 08C6 08C0 08D7 0C01
MLTER OD07
MONAA 0A1F 0A18 0A24 0A27
MONAC 0A17
MONXA 0A49
MONX8 0A48 0A5C 0C8C
MONXC 08CA 08B7 08BE
MON00 0BAF 08B2
MON01 0A1C 09FA
MON02 0A21 0A12
MON03 09EC 08C4
MON04 09FD 09F5
MON05 0A15 0A07 0A0D
MON09 0A2D 0A44 OD67
MON10 0A3D 0A29
MON12 0A25 09FC 0A14 0A5D 0A6A
MON16 0A28
MON17 0A2A 0A40
MON18 0A38 0A39
MON19 0A42 0A46
MON20 0A33 0A36
MRC0 09A0
MRCDE 0C43 09A1
MRCD1 0C6F 0C52
MRCXC 0C6E 0C4D 0C5F 0C77 0C98
MRCX5 OCAA 0C9D
MRC0A 0C9C 0C49 0C9E
MRC0C 0C80 0C6D 0CA7
MRC0F 0CA1 0C93
MRC01 0C5D 0C6C
MRC02 0C68 0C69
MRC03 0C59
MRC05 0C73 0C72
MRC06 0C75 0C7F
MRC08 0C96 0C48
MRC09 0C89 0C66 0C7C 0CA8
MRC10 0C61 0C58
MRC22 0C4E
MRC23 0C7A 0C46
MRC24 0C54 0C50
MRSC 09A3 0D73 0D79 0D7C
MRSC2 0D75 0D7B
MRTER 0C82 0C4A
MRTE1 0C9F 0C92
MRTN CA58 0980 0A5A
MTBEG 08D3 OFFC
MTBSY ODA0 OD92 OD98
MTDSW 0880 0823 0826 0827 082B 082A 082B 083B 083D 083E
MTEND 08CD 0808 08D1
MTFZ OE1E 0DF2 OE13
MTF1 OE15 OE14
MTI 081A 085E
MTIAC 0873 0839
MTIAD 083B
MTIAE 0875 087C
MTIC 0836 0830

2400 FUNCTION TEST

MTICL 086A 084A
MTIC1 084D 0843
MTIER 0896 0885 0886 0889 088A 088F 0890 0891 08A4 08A9
MTIE1 086E 086D
MTIR 0855 0851 08E0
MTIR1 0851 0872 0874
MTIS 085A 0818 081C 0869
MTIT 0840 0866
MTIX1 0879 082C 0836 0863
MTIX2 087A 0838
MTIX3 087B 086C
MTIX4 087C 0873
MTIO 0819 09EF 09FF 0D9A
MTRED 09C8
MTREE 0D8D 09C9
MTRE1 0D8F 0DA2
MTRE2 0D9C
MTRLD 09C5
MTRLE 0DA4 09C6
MTRL1 0DAA
MTRL2 0DAE 0DA9
MTRST 08AC 0806 0807 08C8
MTTWO 0974 0847 0852 0905 0C80 0C94 0D4A
PATWD 0C8F 0C47 0C5B
PEND 0FFA 080F 0FE5
PID 07FF 08D5 0DB5
RAD 0801 0CBE
RDCKR 0AEC 0B2D
RDT 0988
RDE 0AC8 0989
RDT12 0AD8 0888
RDTXA 0AD3 0AE9
RDTXB 0AD4 0B28
RDTXC 0B48 0B41 0B67 0B68 0B69
RDTXD 0AD5 0B1D
RDY0 0AD6 0B2F
RDY4 09B6
RDY6 09BC
RDT03 0B1C 0AEB
RDT04 0B54 0B51
RDT1 0ACE 0B37 0B55
RDT15 0B38 0B32
RDT16 0B41 0B48
RDT17 0B4D 0B5A 0B5B 0B68
RDT18 0B5C 0B1F 0B38
RDT19 0B10 0B08 0B1A 0B18 0B62
RDT20 0B2D 0B29
RDT22 0B63 0B45
RDT29 0B15 0AE5
RDT30 0B07 0B25
RDT35 0AE6
RDT36 0AE7
RDT37 0B2E 0B06
RDT7A 0B57 0ADD 0B4D
RDT8A 0AD7 0AD0 0B01 0B04 0B2B 0C8C
RELDV 0132 0DAA
REQDV 0131 0D96
RID 0800 0CB8 0CBA
RTN 0955
RTN1 0972
RWD 0985
RWDE 0B79 0986
RWDIR 0B8A 088E
RWD11 0B92 0B80 0B8E
RWD12 0B8B 0B90
RWD04 0B7B
RWD08 0B93
SELSW 0B7E 08C2 09F6 0A0E 0A15

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 22

2400 FUNCTION TEST

SETIO 0BE2 08E8
SETI1 0BE5 0918
SETI3 0BE3 0BE6
SETX0 0BCF 08E6
SETX1 0BD2 0919
SETX3 0BD0 0BD3
SETX4 0C1C 08CE 09EC 0BCF 03E2 0BFE 0C18 0C22
SETX5 0C24 09FD 0BD2 0BE5 0C09 0C1A 0C2A
SETX6 0905 0938
SPFNC 09C3 0860
SPIAB 089E 089C
SPINT 089A 0884
SPITB 08A1
SPRT1 0860 0846 0883
STAC 09CE
STACE 0D7E 09CF
STAC1 0D80 0D88
STAC2 0D8A 0D82
STARE 09AC
START 012D 09AD
STIR 09CB
STIRE 0BD4 09CC
STIRO 0BDE 0BDB
STIR1 0BDC
STIR3 0BD9
STIR6 0BE0
STPSE 0BBD 0998
STPST 0997
STPS2 0BC7 08C4
STPS6 0BCD 0BCC
SWC 0B7F 0B3C
SWO 0802 0A25 0A7E 0AED 0CA3 0CFE 0DED 0E0D
SW1 0803 0A3D
SW2 0804 09F2 0A09
SW3 0805
TAG01 0A47 0A38
TAG02 0BA0 0B9B
TERM 080E 0B23 0D9B 0DAD 0DB1 0EE1
WRIAI 0A87
WRIX4 0AB0 0A7B
WRIX6 0AB1 0A9A
WRIX7 0AB2 0A95
WRTB 0A70 0AA8
WRTI 0A73 0887
WRTIA 0A7A
WRTIC 0A8B 0A93 0AAF
WRTID 0A8D 0A8A
WRTIE 0A99 0A7D
WRTIH 0AA0
WRTII 0AA9 0A9C 0AA2
WRTM 098B
WRTME 0A6B 098C
WRT01 0A94 0A81
WRT02 0A83 0A98
WRT03 0A86 0A96
WTM 098E
WTMAB 0AC3 088B
WTME 0ABE 098F
END OF ASSEMBLY

----- LAST PAGE -----

DATE 28FEB66 01JUL66 15MAY67 14NOV69 30JAN70
EC NO. 415120 415178 411731 431319 431319A

PROG ID 0807-1
PAGE 22A

TABLE OF CONTENTS

PARAGRAPH	PAGE
1. PURPOSE.	1A
2. REQUIREMENTS	1A
2.1 PROGRAM REQUIREMENTS	
2.2 EQUIPMENT REQUIREMENTS	
3. OPERATING PROCEDURE.	2
3.1 LOADING PROGRAM	
3.2 PROGRAM OPERATION	
3.3 HALTS	
3.4 TERMINATIONS	
4. PRINTOUTS.	3
4.1 STATUS MESSAGES	
4.2 ERROR MESSAGES	
4.3 SYMBOL MEANINGS	
5. COMMENTS	4A
6. APPENDIX	6
6.1 EDIT PROCEDURE	

1. PURPOSE

THE PURPOSE OF THIS PROGRAM IS TO PREPARE THE 2315 CE DISK PACK FOR USE BY THE DISK DIAGNOSTIC TEST PROGRAM. THIS PROGRAM IS RUN NORMALLY AT INSTALLATION TIME, AND WHEN THE PACK DATA HAS BEEN DESTROYED OR CHANGED. IN THIS PROGRAM ALL FILE ADDRESSES AND THE PROPER SECTOR PATTERNS ARE WRITTEN. THE EXCEPTIONS ARE CYLINDERS 90-110 INCLUSIVE.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

A. PROGRAM PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 2047 STORAGE WORDS.

8. THIS PROGRAM WILL RUN IN OVERLAP MODE, HOWEVER, TO INSURE A SUCCESSFUL (UNDER ALL CONDITIONS) INITIALIZATION PASS, DO NOT INITIALIZE IN THE OVERLAP MODE. THIS PROGRAM IS FOR THE 18DD-181D WITH EITHER THE 13 SD OR THE 44 SD FILE UNIT.

C. PROGRAM EDIT.

THIS PROGRAM REQUIRES TWO EDIT CARDS. IF ONLY ONE DISK STORAGE DRIVE IS ATTACHED TO THE SYSTEM, THEN THE INFORMATION FOR SAID DISK STORAGE DRIVE IS PLACED IN THE AREA ENTITLED FILE 1. FOR TWO DISK STORAGE DRIVES, FILL IN FILE 1 AND FILE 2 INFORMATION. THE THIRD DISK STORAGE DRIVE INFORMATION IS PLACED IN FILE 3. THE EIGHT AREAS DESIGNATED 'ALT ADDR FIELD' ARE USED ONLY WHEN ONE OR MORE OF THE ADDRESSES IN THE CE DISK PACK THAT ARE NORMALLY USED ARE NOT USABLE. ANY UNUSABLE ADDRESSES WILL APPEAR IN THE CYLINDER ERROR TABLE. ALL EIGHT ADDRESSES OF AN ERROR CYLINDER WILL BE RECORDED. THIS TABLE IS PRINTED OUT AT THE END OF THE PROGRAM, PROVIDED THERE HAVE BEEN ENTRIES. THE EIGHT ADDRESSES NORMALLY USED ARE - 0000, 0008, DD1D, DD18, D638, D64D, D648, AND D65D. IF ADDRESS D64D WAS NOT USABLE FOR SOME REASON, THEN D64D COULD BE REPLACED WITH D63D. THEREFORE, D63D WOULD BE PLACED IN THE SIXTH AREA SINCE D64D IS THE SIXTH ADDRESS NORMALLY REFERENCED. NOW ALL REFERENCES TO D64D WILL BE REFERENCED INSTEAD TO D63D.

NOTES

NOTE 1

ALL DISK STORAGE DRIVE ASSIGNMENTS (FILE 1, FILE 2, AND FILE 3) AND ALL THE NORMAL ADDRESSES PRIOR TO THE ADDRESS BEING CHANGED MUST ALSO BE PUNCHED INTO EDIT CARD NUMBER 0. WHEN DISK STORAGE DRIVES ARE NOT ATTACHED TO THE SYSTEM, FILL THEIR DESIGNATED AREAS WITH ZEROES. IN OUR EXAMPLE THEN, D000-0008-D010-0018-D638 MUST ALSO BE PUNCHED PRIOR TO D63D.

NOTE 2

IF AN ADDRESS IS CHANGED, THE SAME EDIT INFORMATION IS REQUIRED BY THE 1810 FUNCTION TEST. THE ONLY DIFFERENCE WILL BE THE PID NUMBER.

2.2 EQUIPMENT REQUIREMENTS

2315 CE DISK PACK.

3.0 OPERATING PROCEDURE

3.1 PROGRAM LOADING

PLACE THE 2315 CE DISK PACK IN THE 1810 TD 8E USED AND FOLLOW THE STEPS BELOW.

- 1) TURN POWER ON.
- 2) WAIT LONG ENOUGH FOR THE MACHINE TO BECOME READY.
MACHINE MUST BE READY PRIOR TO EXECUTING PROGRAM.

STANDARD LOADING PROCEDURES AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURES FOR DETAILS.

1. CLEAR STORAGE TO 70FF
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF OPERATION
4. SELECT MONITOR CONTROL OPTIONS.
5. SELECT DRIVE TO BE RUN FROM TABLE 2.
6. INSTRUCT MONITOR TO EXECUTE THIS PROGRAM.
7. IF WAIT 30CE OCCURS, SELECT CONTROL AS PER TABLE 3. NOTE -- THIS WAIT LOOP IS A SAFETY LOOP TO PREVENT INITIALIZING A DIMAL PACK OR CUSTOMER PACK UNINTENTIONALLY. AN EW62/EW63 CAN OCCUR ON A VIRGIN PACK OR ON AN ERROR CONDITION. THE PROGRAM WILL THEN BRANCH TO THE 30CE WAIT. THEREFORE, CHECK PRINTOUTS BEFORE PRECEEDING. ANALYZE ERROR ADDRESSES, IF ERROR OCCURED, BEFORE PROCEEDING WITH INITIALIZATION.

TABLE 2 DEVICE SELECTION

THIS FUNCTION IS USED FOR SELECTING DEVICES FOR MULTIPLE DEVICE PROGRAMS. IF THE ENTRY FOR FUNCTION 2 IS EITHER 0000 OR 8000 THE FIRST FILE WILL BE EXECUTED.

*****	1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM *	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 *	3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
* 1 0 0 0 1 0 0 0 *	4. PRESS CONSOLE INTERRUPT.

* DATA ENTRY SWITCHES	* DESCRIPTION
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *	
* 0 0 0	* FIRST FILE A1
* 1 0 0	* FIRST FILE A1
* 0 1 0	* SECOND FILE A2
* 0 0 1	* THIRO FILE A3

TABLE 3 SPECIAL CONOITION CONTROL

THIS FUNCTION IS USED TO CONTROL THE OPERATION OF VARIOUS SPECIAL CONDITIONS OR FUNCTIONS.

*****	1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1
* SENSE/PROGRAM *	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 *	3. SET DESIRED CONTROL OPTIONS IN DATA SWITCHES 0 TO 15.
* 1 1 0 0 1 0 0 0 *	4. PRESS CONSOLE INTERRUPT.

* DATA ENTRY SWITCHES	* DESCRIPTION
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *	
* 1	* CE RECOGNIZES THAT DISK PACK IS
	* EITHER A DIMAL, VIRGIN, OR CUSTOMER
	* PACK AND IT IS TO BE INITIALIZED.
* 1	* 8YPASS ARM TO HOME (OCARM RT) BETWEEN
	* RTNS.
* 1	* SEMI-AUTO I/O AREA SCAN. DISPLAYS
	* ONE WORD IN THE ACCUMULATOR EACH TIME
	* THE START KEY IS PRESSED AFTER EW06
	* MESSAGE. THE WORD COUNT IS DISPLAYED
	* ON THE FIRST WAIT. (300A) SCAN RT
	* EXITS AFTER I/O WORD 321 OR FNC BIT
	* 15 + CONSOLE INTERRUPT IS PRESSED.
	(NOTE ...8IT 15 IS A NON OVERLAP
	FNC)

3.3 PROGRAM HALTS

THIS PROGRAM HAS ONE HANGUP WAIT 70FF. THIS OCCURS ON A DOUBLE OR NON SCHEDULED INTERRUPT ON THIS LEVEL AND ILSW 8IT. SEE BEGINNING OF LISTING FOR LOCATION AND DETAILS.

THE FOLLOWING WAITS MAY OCCUR.

* ADDR LABEL *	* WAIT NUMBER *		* DESCRIPTION	*
* WAIT1 *	* 30CE *		* THIS IS A SAFETY WAIT TO NOTIFY THE CE THAT THIS	*
			* IS A DIMAL, CUSTOMER OR VIRGIN PACK. SEE 3.2-7.	*
* WAIT2 *	* 30ED *		* THIS WAIT SIGNIFIES THE END OF THE PROGRAM.	*
			* TO RETURN TO THE MONITOR -- PRESS RESET + START.	*
			* THE WAIT IS NECESSARY FOR A DIMAL PACK TO PRE-	*
			* VENT THE PROGRAM FROM RETURNING TO THE DISK VIA	*
			* THE MONITOR LOAD TO LOOK FOR THE PROGRAM CON-	*
			* TROL.	*

3.4 PROGRAM TERMINATION

THE PROGRAM WILL AUTOMATICALLY TERMINATE AFTER ONE PASS. AN A001 MESSAGE FOLLOWED BY AN AEOD WILL INDICATE PROGRAM TERMINATION.

NOTE

IF THE PROGRAM IS NOT ALLOWED TO MAKE A NORMAL TERMINATION, THE DISK PACK WILL NOT BE ACCEPTED BY THE 1810 PROGRAM.

4. PRINTOUTS

4.1 STATUS MESSAGES

PIO MIO RIO RAO

0800 A001 0017 XXXX PPC TSC RSC
TWC SWE HWE
TRC SRE HRE
COMPLETE PASS OF PROGRAM AND STATISTICAL INFORMATION.

0800D A004 D0DN XXXX
THIS MESSAGE IS ALWAYS PRECEDED BY TWO EWDB MESSAGES. THE TWO
EWDB MESSAGES INDICATE THAT THE WRONG ADDRESS WAS READ TWICE AFTER
THE INITIAL SEEK. HOWEVER, REZEROING THE ARM AND RESEEKING THE
PROPER ADDRESS WAS OBTAINED. THE PROGRAM COUNTS THIS AS ONE SEEK
ERROR.

0800 AE00 000N XXXX
END OF DISK DIAGNOSTIC. AN 'AE0D' FOLLOWING AN 'A001' EQUALS NORMAL
PROGRAM TERMINATION. AN 'AE0D' FOLLOWING AN 'E403' INDICATES THAT
THE ACCESS ARM DID NOT GO TO HOME DURING INITIALIZATION OF PROGRAM.

0800 A00C 000N XXXX
THIS MESSAGE IS ACCOMPANIED WITH A 30CE WAIT. IT IS TO INFORM THE
CE OF THE 30CE INITIALIZATION WAIT CONDITIONS. SEE SECTION 3.2.7
FOR DETAILS. NOTE THE TABLE 3 DESCRIPTION.

0800 CBAD D0DN XXXX ADRO ADR1 ADR2 ADR3 ADR4 ADR5 ADR6 ADR7
THIS IS THE CYLINDER ERROR TABLE (CET) PRINTOUT. THE ADDRESSES HERE
ARE IN ERROR. ONE BAD SID (SECTOR ID) WILL CAUSE ALL EIGHT ADDRESSES
FOR SAID CYLINDER TO BE INCLUDED IN CET. FOUR LINES OF CET OUTPUT
EQUAL A BAD PACK. (SEE EW66) ADRO TO ADR7 ARE THE BAD ADDRESSES
(SECTORS 0-7) OF SAID CYLINDER. SEE COMMENTS.

4.2 ERROR MESSAGES

* THE MESSAGE IDENTIFICATION WORD (MID) FOR ERROR PRINTOUTS IS OF *
* THE FORM EWNN, WHERE, *
* *
* E = ERROR MESSAGE IDENTIFIER *
* W = VARIABLE DIGIT DEFINING THE XIO FUNCTION CODE AS FOLLOWS, *
* *
* 0 = NO XIO FUNCTION ASSOCIATED WITH ERROR MESSAGE, OR TEST *
* MESSAGE. *
* 4 = CONTROL FUNCTION (SEEK) *
* 5 = INITIALIZE WRITE FUNCTION *
* 6 = INITIALIZE READ FUNCTION *
* 7 = SENSE DEVICE FUNCTION *
* *
* NN = MESSAGE NUMBER *

PIO MIO RIO RAO MO01 MO02 MO03 MO04 MO05

0800 EW01 D0DN XXXX OSW LGA DDA AAR SCI
INTERRUPT WAS LOST. PROGRAM AUTOMATICALLY RETRIES TO EXECUTE ROUTINE.

0800 EW02 000N XXXX OSW
FILE NOT READY, BUSY, OP COMPLETE OR ANY ERROR IS ON.

0800 EW03 000N XXXX OSW
OSW HOME BIT NOT ON OR ARM 010 NOT RETURN TO HOME WITH A ZERO ADDRESS
FOR A 44 SD OR 204 INCR FOR A 13 SD. DSW SHOULD BE 080X WHERE X = 4
TO 7 FOR A 44 SD AND X = 0 TO 3 FOR A 13 SD FILE UNIT.

0800 EW04 00DN XXXX DSW LGA DDA AAR SCI
DESIRED ADDRESS IS IN THE TABLE OF BAD ADDRESSES.
ROUTINE TERMINATED. NEXT ROUTINE IS TRIED.

0800 EW05 00DN XXXX DSW
OSW HAS BIT/BITS ON THAT SHOULD NOT BE ON AT THIS TIME. BRANCH TO
MONITOR END ROUTINE.

0800 EW06 000N XXXX DSW LGA DDA AAR SCI
OSW ERROR BIT/BITS ON AFTER A READ OR WRITE.

0800 EW07 D0DN XXXX DSW
HARD READ OR WRITE ERROR. INDICATES TEN SOFT READ/WRITE RETRIES WITH
FAILURE STILL PRESENT. DSW INDICATES ERROR BITS. EW06 MESSAGES WILL
PRECEED THIS ERROR MESSAGE.

0800 EWDB D0DN XXXX DSW LGA DDA AAR SCI
ACTUAL ADDRESS READ AND THE DESIRED ADDRESS DO NOT AGREE. (RD,
RD-CK FUNCTION ONLY) FIRST EWDB WILL CAUSE A RE-READ OF THE DE-
SIRED ADDRESS. SECOND EWDB WILL CAUSE A RE-ZERO OF THE ACCESS
ARM AND A RE-SEEK AND A READ OF THE DESIRED ADDRESS.

0800 EW09 D0DN XXXX DSW LGA DDA AAR SCI
THIS MESSAGE WILL ALWAYS BE PRECEDED BY TWO EWDB MESSAGES. THE
ACTUAL AND THE DESIRED ADDRESSES STILL DO NOT AGREE. (SEE EWDB
MESSAGE.) THE ACTUAL ADDRESSES OF THE TWO EWDB MESSAGES ARE THE
SAME. THEREFORE, A SEEK ERROR MOST LIKELY OCCURED. HOWEVER, THERE
IS STILL A POSSIBILITY OF A READ, WRITE, OR DISK PACK RECORDED DATA
ERROR OR ERRORS.

0800 EW0A 000R XXXX DSW
DSW HOME BIT NOT ON OR ARM DID NOT RETURN TO HOME WITH A ZERO ADDRESS
RESTORE ACCESS OPERATION. DSW SHOULD BE 080X WHERE X = 4 TO 7 FOR
A 44 SD AND X = 0 TO 3 FOR A 13 SD FILE UNIT.

0800 EW15 D0DN XXXX DSW LGA DDA AAR SCI
THIS MESSAGE WILL ALWAYS BE PRECEDED BY TWO EWDB MESSAGES.
THE ACTUAL AND THE DESIRED ADDRESSES STILL DO NOT AGREE. (SEE
EWDB MESSAGE.) THE ACTUAL ADDRESSES OF THE TWO EWDB MESSAGES
ARE NOT THE SAME. THEREFORE, A READ ERROR MOST LIKELY OCCURED.
HOWEVER, THERE IS STILL A POSSIBILITY OF A SEEK, WRITE, OR DISK
PACK RECORDED DATA ERROR OR ERRORS.

0800 EW20 D002 XXXX DSW LGA DDA AAR SCI
WRONG ADDRESS READ, DESIRED AND ACTUAL DO NOT AGREE.
THIS IS A SECTOR ERROR.

0800 EW21 0002 XXXX DSW LGA DDA AAR SCI
READ SUBROUTINE ERROR RETURN. DSW, ADDRESS OR DATA MAY BE IN ERROR.
CHECK PRINTOUT CAREFULLY.

0800 EW40 000R XXXX DSW
OSW ERROR BITS ON AFTER A SEEK OPERATION. PROGRAM CONTINUES. DSW
SHOULD BE 4Y0X WHERE Y CONTAINS A 0 OR 8 AND X EQUALS 4 TO 7 FOR A
44 SD AND X EQUALS 0 TO 3 FOR A 13 SD FILE UNIT.

0800 EW41 00DR XXXX DSW LGA DDA AAR SCI
OSW ERROR BITS INDICATES A SEEK INVALID ADDRESS ERROR. CHECK PROGRAM
FOR PROPER ADDRESS. PROGRAM BRANCHES TO MONITOR END.

0800 EW42 00DR XXXX DSW
DSW ERROR BITS INDICATES A SEEK INCOMPLETE ERROR. CHECK FILE SEEK
CIRCUITS. PROGRAM BRANCHES TO RESTORE ARM AND THEN EXITS TO
MONITOR ENO.

0800 EW60 D001 XXXX OSW LGA DDA AAR SCI
WRITE ERROR RETURN. THIS OCCURS IN ROUTINE NO. 01, WHICH

PLACES THE PROPER PATTERN ON THE DISK.

0800 EW61 0001 XXXX DSW LGA DDA AAR SCI
READ ERROR RETURN. THIS OCCURS IN ROUTINE NO. 01, WHICH
PLACES THE PROPER PATTERN ON THE DISK.

0800 EW62 000N XXXX DSW LGA DDA AAR SCI
ERROR OCCURED ON READING SECTOR 0 OF CE TRACK. THIS READ TESTS FOR A
DIMAL PACK. PROGRAM TRIED TWO TIMES TO READ THIS SECTOR. CE MAY
PROCEED AFTER CHECKING PRINTOUTS (SEE 3.2-7) AS THE PROGRAM WILL
BRANCH TO THE 30CE WAIT FOR INITIALIZATION CONTROL. RE-READ IS VIA A
RE-SEEK OPERATION. ADDRESS DESIRED + ACTUAL DO NOT AGREE.

0800 EW63 000N XXXX DSW LGA DDA AAR SCI
ERROR OCCURED ON READING SECTOR 7 OF CE TRACK. THIS READ TESTS FOR A
CE PACK. PROGRAM TRIED TWO TIMES TO READ THIS SECTOR. CE MAY
PROCEED AFTER CHECKING PRINTOUTS (SEE 3.2-7) AS THE PROGRAM WILL
BRANCH TO THE 30CE WAIT FOR INITIALIZATION CONTROL. RE-READ IS VIA A
RE-SEEK OPERATION. ADDRESS DESIRED + ACTUAL DO NOT AGREE.

0800 EW66 0002 XXXX DSW LGA DDA AAR SCI
FOUR OR MORE CYLINDERS HAVE BAD SECTORS. THIS PACK IS THEREFORE 8AD,
ACCORDING TO THE DESIGN SPECIFICATIONS. DOES NOT CONTAIN 200 GOOD
CYLINDERS.

0800 E077 0003 XXXX
WHEN THIS MESSAGE FOLLOWS AN 'E004' IT INDICATES THAT THE DESIGNATED
'CE' CYLINDER (199) ADDRESS 0638 IS 8AD. IT WILL BE NECESSARY TO
RE-EDIT THE PROGRAM. CHANGE ADDRESS NUMBER 5 (0638) TO SOME OTHER
UNUSED ADDRESS. SUGGESTED ALTERNATE ADDRESS IS 0630 (CYLINDER 198).

0800 EWCE 0002 XXXX DSW LGA DDA AAR SCI
ERROR IN WRITING CE DISK SECTORS 3 AND 7. THESE SECTORS CONTAIN
SECTOR ID, 'CEDC' ID WORD, NUMBER OF ERROR SECTORS, SECTOR ADDRESS
ERROR TABLE, AND THE STANDARD PATTERN.

4.3 SYM80L MEANINGS

AAR - ACTUAL ADDRESS READ
AWP - ACTUAL WORD PATTERN (WORD PATTERN READ)
DDA - DESIRED DISK ADDRESS (THE ADDRESS THE OPERATION REQUIRES)
DSW - DISK STATUS WORD
EWP - EXPECTED WORD PATTERN
HRE - HARD READ ERROR (TOTAL)
RSC - RE-SEEK COUNT (TOTAL)
HWE - HARD WRITE ERROR (TOTAL)
LGA - LAST GOOD ADDRESS READ
PPC - PROGRAM PASS COUNT
SCI - SEEK CYLINDER INTERVAL (MEASURED FROM HOME)
SRE - SOFT READ ERROR (TOTAL)
SWE - SOFT WRITE ERROR (TOTAL)
TRC - TOTAL READ COUNT
TSC - TOTAL SEEK COUNT
TWC - TOTAL WRITE COUNT
WEC - WORD ERROR COUNT (THE NUMBER OF THE WORD IN THE RECORD THAT IS
IN ERROR)
000N - ANY OF SEVERAL ROUTINE NUMBERS
ADRO - CYLINDER X -- SECTOR 0 ADDRESS.
ADR1 - CYLINDER X -- SECTOR 1 ADDRESS.
ADR2 - CYLINDER X -- SECTOR 2 ADDRESS.
ADR3 - CYLINDER X -- SECTOR 3 ADDRESS.
ADR4 - CYLINDER X -- SECTOR 4 ADDRESS.
ADR5 - CYLINDER X -- SECTOR 5 ADDRESS.
ADR6 - CYLINDER X -- SECTOR 6 ADDRESS.
ADR7 - CYLINDER X -- SECTOR 7 ADDRESS.
XXXX - UNKNOWN ADDRESS (RELOCATABLE)

5. COMMENTS

5.1 DISK ADDRESSING SCHEME

THE FOLLOWING 'IS THE FORMAT FOR THE DISK ADDRESSING SCHEME --

HEX WD	N	N	N	N
8ITS	0 1 2 3	4 5 6 7	8 9 10 11	12 13 14 15
CODE	X X X X	X C C C	C C C C	C H S S
CYL. POS CNT		1 0 0	0 0 0 0	0
READ		2 6 3	1 0 0 0	0
DOWN		8 4 2	6 8 4 2	1

C = CYLINDER H = HEAD S = SECTOR X = NOT USED

THE LOWEST CYLINDER ADDRESS IN HEX = 0000
THE HIGHEST CYLINDER ADDRESS IN HEX = 0657
THE ADDRESSES ARE CYLINDER 0, HEAD 0, SECTOR 0 TO CYLINDER 202,
HEAD 1, SECTOR 3.

THE ABOVE ADDRESSING FORMAT IS USED FOR ALL THE SECTOR IDENTIFICATION
WORD. (CALLED SID) IT APPEARS ON THE DISK AND AS THE FIRST
WORD OF DATA TO BE READ OR WRITTEN TO OR FROM CORE. IT IS THE
SECOND WORD OF THE FIELD ADDRESSED BY THE IOCC. (THE FIRST WORD OF
SAID FIELD IS THE WORD COUNT) IT APPEARS IN THE MESSAGE PRINTOUTS
IN MODIFIER POSITIONS TWO THRU FOUR. (THESE ARE THE DISK ADDRESSES)

A. TO CONVERT HEX DISK ADDRESS WORD TO DECIMAL. PERFORM THE
FOLLOWING

1. FIND CORRESPONDING C.V. FOR EACH N IN THE ADDRESS.
2. ADD THE C.V.'S TOGETHER.
3. C.V. TOTAL IS THE ACTUAL CYLINDER NUMBER IN DECIMAL.
4. FIND CORRESPONDING S.N. FOR UNITS N OF HEX ADDRESS.
5. S.N. IS THE ACTUAL DECIMAL HEAD - SECTOR NUMBER.

EXAMPLE --

CONVERT 03BD TO DECIMAL CYLINDER AND SECTOR NUMBERS.

SOLUTION -- FROM TABLE

0 3 8 D	C.V.	S.N.
.		
.		
.	1	5
.		
.	22	
.		
.	96	
	-----	-----
CYLINDER	119	5 SECTOR

B. TABLE 3. HEX ADDRESS CONVERSION

*****				*****			
DISK ADDRESS		C.V. = CYLINDER VALUE					
WORD IN HEX		S.N. = SECTOR NUMBER					
. . . 0 N N N		NNN = HEX ADDRESS FROM					
ZERO NOT USED		000 TO 657					
.							
.							
*****		*****		*****		*****	
N	C.V.	N	C.V.	N	C.V. + S.N.		
0	= 00	0	= 0	0	= 0 + 0		
1	= 32	1	= 2	1	= 0 + 1		
2	= 64	2	= 4	2	= 0 + 2		
3	= 96	3	= 6	3	= 0 + 3		
4	= 128	4	= 8	4	= 0 + 4		
5	= 160	5	= 10	5	= 0 + 5		
6	= 192	6	= 12	6	= 0 + 6		
		7	= 14	7	= 0 + 7		
		8	= 16	8	= 1 + 0		
		9	= 18	9	= 1 + 1		
		A	= 20	A	= 1 + 2		
		B	= 22	B	= 1 + 3		
		C	= 24	C	= 1 + 4		
		D	= 26	D	= 1 + 5		
		E	= 28	E	= 1 + 6		
		F	= 30	F	= 1 + 7		
*****		*****		*****		*****	

5.2 ROUTINES

IT IS THE INTENT OF THIS SECTION TO DESCRIBE THE FUNCTIONS OF EACH TEST ROUTINE AND THE OISK SUPERVISOR ROUTINES. THE FOLLOWING ARE THE IMPORTANT OISK SUPERVISOR ROUTINES-

PROGRAM LISTING LABEL	FUNCTION
OCARM	RETURN ARM TO HOME
OEXEQ	SETUP AND EXECUTE THE IOCC.
DCABP	BYPASS CYLINDERS 90 THRU 110.
DCROY	FILE READY, NOT BUSY AND NO ERRORS.
OCOSW	SENSE DSW AND SAVE IT.
DCRTN	ROUTINE NUMBER AND PROGRAM CONTROL ROUTINE.
OCSK	SEEK SUBROUTINE.
OCWR	WRITE SUBROUTINE.
OCRO	READ SUBROUTINE.
COTRT	COMMON DATA TRANSFER ROUTINE.
NTRPT	INTERRUPT ROUTINE.
START	MONITOR CONTROL RETURN.
ENO	MONITOR ENO ENTRY.

THE OISK SUPERVISOR ROUTINES ARE THE INTERFACE BETWEEN THE DIAGNOSTIC MONITOR AND THE TEST ROUTINES. THESE ROUTINES DO THE BASIC TESTING, CHECKING AND CONTROLLING FOR THE USING ROUTINES WHICH MAY INCLUDE OTHER SUPERVISOR ROUTINES AS WELL AS TEST ROUTINES. THEREFORE, THE ERROR MESSAGES OF SUPERVISOR ROUTINES POINT TO BASIC OR GENERAL PROBLEMS AND SHOULD NOT BE DISREGARDED OR NOTICED CASUALLY. IN SHORT, ALL ERROR MESSAGES SHOULD BE CAREFULLY ANALYZED TO SEE HOW THEY RELATE TO EACH OTHER.

NOTE

AN UNSCHEDULED INTERRUPT WILL CAUSE A PROGRAM HANG CONDITION. SEE THE INTERRUPT ROUTINE.

AGAIN IT MUST BE SAID, 'ALL ERROR MESSAGES MUST BE ANALYZED TO FIND THEIR ASSOCIATION WITH EACH OTHER.'

ROUTINE 01 WRITE SECTOR IDENTIFICATION ON CYLINDERS 000 (0000) THRU 089 (02CB) AND 111 (037B) THRU 202 (0650) WRITES ALTERNATE WORST CASE PATTERNS ON ALL CYLINDERS AND USES 2 SECTORS TO LOG ALL CYLINDERS THAT ARE BAD. THE CYLINDER ERROR TABLE (C.E.T.) IS LOCATED ON SECTOR ID 063B AND 063F.

ROUTINE 02 VERIFIES CORRECT ADDRESSES ON ALL CYLINDERS (EXCEPT 90 - 110 INCLUSIVE). THIS IS A REVERSE READ. STARTS AT CYLINDER 202 AND READS TO HOME ADDRESS 0000 (HEX).

NOTE

ANY ERROR TYPEOUTS DURING ROUTINE 2 WILL CAUSE THE INITIALIZATION PROGRAM TO BE RESTARTED. THESE TYPEOUTS COULD INDICATE IMPROPER SEEK AND WRITING OF THE SECTOR ADDRESS, THEREFORE TO ENSURE PROPER INITIALIZATION THE PROGRAM IS AUTOMATICALLY RESTARTED. IF ERROR MESSAGES WITH ROUTINE 2 DESIGNATED KEEP REOCCURRING, THIS INDICATES IMPROPER SEEK INCREMENTING FROM CYLINDER 0 TO 202. INVESTIGATE SEEK ERRORS BEFORE TRYING TO INITIALIZE THE PACK.

ROUTINE 03 WRITES THE CE SECTORS WHICH CONTAIN THE CYLINDER ERROR TABLE DATA. THE CE SECTORS ARE IDENTIFIED BY THE WORD 'CEOC' FOLLOWING THE SECTOR ID. 1313 ON SECTORS 0,2,5, AND 7. E5E5 ON SECTORS 1,3,4, AND 6. THE C.E.T. IS PRINTED AT THE END OF THE PROGRAM IF THERE ARE ENTRIES IN IT. CE SECTORS ARE 3 AND 7.

NOTE

IF AN ERROR OCCURS DURING THIS ROUTINE THAT INDICATES IMPROPER CE DATA SECTOR, AN ALTERNATE SHOULD BE SELECTED VIA EDIT CARDS.

----- LAST PAGE -----

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES: 1. AN "E" IN COLUMN 1. 2. THE PID FOR THIS PROGRAM (COL 2-3). 3. A TERMINATOR WORD OF "FFFF" (COL 7-10).

COLUMN	PROGRAM ID				CARD SEQUENCE NUMBER				NUMBER OF EDIT ENTRIES (1-B)				DRIVE 1 DDEF ENTRY 1			DRIVE 2 DDEF ENTRY 2			DRIVE 3 DDEF ENTRY 3			ALTERNATE FILE ADDRESSES															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	26	31	ENTRY 4	ENTRY 5	ENTRY 6	ENTRY 7	ENTRY 8	ENTRY 9	ENTRY A	ENTRY B						
CARD 0	E	0	8	0	0		E	D	0	0		0	0	0																							
END	E	0	8	0	0		F	F	F	F																											

CARD 0 CONTAINS THE DDEF'S FOR THE 2310 DRIVES. REFER TO NOTE AT BOTTOM OF PAGE.

CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.

** ADDRESSES THAT ARE NORMALLY USED. THESE ADDRESSES NEED NOT BE PUNCHED UNLESS AN ADDRESS IS BEING CHANGED. THEN, ALL ADDRESSES TO THE LEFT OF SAID CHANGE MUST BE PUNCHED, AND THE TOTAL NUMBER OF ALL ENTRIES INDICATED (COL. 15). IF SYSTEM HAS A1 OR A2 FILE, THE UNUSED DRIVEFIELDS MUST BE PUNCHED 0000 ONLY WHENEVER AN ADDRESS REFERENCE FIELD IS PUNCHED. (OTHERWISE LEAVE UNUSED DRIVEFIELDS BLANK.) SEE SEC. 2.2.1.B

3001

ORG *E/3001

```
* ..... *
* 1800-1810 FILE DIAGNDSTIC *
* TEST. PRDGRAM RELDCATED *
* AT 2047 DR HIGHER.
* TWD EDIT CARDS REQUIRED.*
* SEE WRITEUP FDR DETAILS. *
* ..... *
```

```
* ***** PROGRAM CONTROL *****
* ***** CONDITION WAITS *****
```

3001 1 089C

DC WAIT1 CE WAIT NUMBER 1

```
* WAIT1 -- IS TO LET THE
* CE KNDW THAT A DIMAL,
* CUSTDMER, OR VIRGIN PACK
* IS TO BE INITIALIZED.
* THIS WAIT ALLOWS THE CE TO
* MAKE THE DECISION WHETHER
* THIS PACK IS DR IS NOT TO
* BE INITIALIZED.
```

3002 1 088F

DC WAIT2 END OF INIT PGM

```
* WAIT2 -- INDICATES THAT
* THE END OF THE INITIAL-
* IZATION PRDGRAM HAS BEEN
* REACHED. NOTE -- IF THIS
* PRDGRAM WAS LDAOED FRDM
* THE DISK VIA DIMAL, DD NOT
* TRY TO PROCEED WITHOUT RE-
* LOADING DISK DIMAL PGMS.
* TO RECDVER FROM THIS WAIT,
* PRESS STOP-RESET-START IN
* THAT ORDER. THIS WILL RE-
* TURN CDNTRL TO THE
* MDNITDR.
```

7001

DRG *E/3FFE

```
* ***** ERROR TRAP 01 *****
* ***** PROGRAM HANGUP *****
```

7001 1 08F0

DC NTRER INTERRUPT ERROR TRAP

```
* ALL SCHEDULED INTERRUPTS
* SET A TRANSFER VECTOR IN
* THE INTERRUPT ROUTINE.
* IF SAID VECTDR WORD IS
* BLANK, THE HANGUP WILL
* OCCUR. THE CAUSE MAY BE
* ONE OF TWD CDNDITIONDS.
* 1-- AN UNSCHEDULED INTER-
```

80800020
80800030
80800040
80800050
80800060
80800070
80800080
80800090
80800100
80800110
80800120
80800130
80800140
80800150
80800160
80800170
80800180
80800190
80800200
80800210
80800220
80800230
80800240
80800250
80800260
80800270
80800280
80800290
80800300
80800310
80800320
80800330
80800340
80800350
80800360
80800370
80800380
80800390
80800400
80800410
80800420
80800430
80800440
80800450
80800460
80800470
80800480
80800490
80800500
80800510
80800520
80800530
80800540
80800550
80800560
80800570
80800580
80800590
80800600
80800610
80800620
80800630
80800640
80800650
80800660
80800670
80800680
80800690

07FF

ORG *-/6803

```
* RUPT DN THIS LEVEL WITH
* THIS ILSW BIT, DR 2--
* A DDOUBLE OR NDN-RESETABLE
* INTERRUPT. CONDITION
* TWO WILL BE INDICATED BY
* HAVING INTERRUPT LEVEL BIT
* STILL DN IN THE CONSOLE
* LITES. THE TRANSFER
* VECTOR IS ZEROED AFTER THE
* ADDRESS IS SET IN THE
* MLSCF TABLE.
```

```
* ..... *
* EQUATE TABLE FOR MONITOR *
* ..... *
```

```
* BEGIN EQU 300
* START EQU BEGIN&1
* END EQU START&1
* LDG EQU END&1
* ERRDR EQU LDG&1
* REQDV EQU ERRDR&1
* RELDV EQU REQDV&1
* HALT EQU RELDV&1
```

```
* ..... *
* PROGRAM START TABLE *
* ..... *
```

PID	DC	/OC00	PRDGRAM ID
RID	DC	0	RDUTINE ID
RAD	DC	0	ROUTINE ADDR
SW0	DC	0	FUNCTION 00
SW1	DC	0	01
SW2	DC	0	10
SW3	DC	0	11

```
* ..... *
* MAINLINE SEQ CTRL FLD *
* ..... *
```

IPA	DC	DIPA	INIT PRDG ADDR
LPA <td>DC<td>DLPA<td>LDDP PRDG ADDR</td></td></td>	DC <td>DLPA<td>LDDP PRDG ADDR</td></td>	DLPA <td>LDDP PRDG ADDR</td>	LDDP PRDG ADDR
EPA <td>DC<td>DEPA<td>END PRDG ADDR</td></td></td>	DC <td>DEPA<td>END PRDG ADDR</td></td>	DEPA <td>END PRDG ADDR</td>	END PRDG ADDR
LIV <td>DC<td>0<td>LOST NTRPT RT ENTRY</td></td></td>	DC <td>0<td>LOST NTRPT RT ENTRY</td></td>	0 <td>LOST NTRPT RT ENTRY</td>	LOST NTRPT RT ENTRY
XNR <td>DC<td>0<td></td></td></td>	DC <td>0<td></td></td>	0 <td></td>	
MLN <td>DC<td>0<td>MAIN LINE ENTRY</td></td></td>	DC <td>0<td>MAIN LINE ENTRY</td></td>	0 <td>MAIN LINE ENTRY</td>	MAIN LINE ENTRY
TERM <td>DC<td>/FFFF<td>TERMINATOR</td></td></td>	DC <td>/FFFF<td>TERMINATOR</td></td>	/FFFF <td>TERMINATOR</td>	TERMINATOR
PEND <td>DC<td>OMEGA<td>LAST WORD OF PRDG</td></td></td>	DC <td>OMEGA<td>LAST WORD OF PRDG</td></td>	OMEGA <td>LAST WORD OF PRDG</td>	LAST WORD OF PRDG
	DC	0	
	DC	0	
	DC	0	
	DC	0	
	DC	0	

```
* ..... *
* EDIT DATA & ADDR T8L *
* ..... *
```

EDTA1	DC	0	A1 DISK DEFINE FLD
EDTA2	DC	0	A2 DISK DEFINE FLD
EDTA3	DC	0	A3 DISK OEFINE FLD
DSKA0	DC	/0000	000 DISK CYL ADDR

0813 0 0000
0814 0 0000
0815 0 0000

0816 0 0000

2315 DISK INITIALIZER

```
*
0883 0 C3E5      LD      3 -27      GET WORD COUNT      80802740
0884 0 D30D      STO      3 13      SET WORD COUNT      80802750
0885 0 43A8      BSI      3 -88     BR TO READ SUB RT   SC 80802760
0886 0 7018      MOX      DMLC1     BR TO ERR RD RTN    80802770
                                80802780
*
0887 1 C400 OC57  LD      L DCD&E2     GET SECOND DATA WORD 80802790
0889 0 F014      EOR      DMLXT     TEST FOR DIMAL IND    80802800
088A 1 4C18 0896 BSC      L DMLIC,&-    BR IF DIMAL PATTERN 80802810
                                80802820
*
088C 0 C3D8      LD      3 -40     GET BASIC CE ADDR    80802830
088D 0 EBF9      OR       3 -7      SET IN CE SECT ADDR 80802840
088E 0 D30B      STO      3 11     SET ADDR IN CTRL TBL 80802850
088F 0 43A8      BSI      3 -88     BR TO READ SUB RT   SC 80802860
0890 0 7012      MOX      DMLC2     BR TO ERR RD RTN    80802870
                                80802880
*
0891 1 C400 OC57  LD      L DCD&E2     GET SECOND DATA WORD 80802890
0893 0 F3C7      EOR      3 -57     TEST FOR CE PACK IND 80802900
0894 1 4C18 0869 BSC      L DCTL3,&-    BR TO INIT IF CE IND SX 80802910
                                80802920
*
0896 1 C400 0805 DMLIC LD      L SW3      GET SW 3 FUNCTION   SX 80802930
0898 1 4C28 0869 BSC      L DCTL3,Z&  BR TO INIT IF NEG 80802940
                                80802950
*
089A 0 4328      BSI      3 40      BR TO MSAG FORM 0    MC 80802960
089B 0 A0DC      DC       /A0DC     -- MSAG # --          80802970
                                80802980
*
089C 0 30CE      WAIT1  DC      /30CE  WAIT FOR CE GD AHEAD 80802990
089D 0 70F8      MOX      DMLIC     LODP TO RE-CHECK      80803000
                                80803010
*
089E 0 ABCD      DMLXT  DC      /ABCD  DIMAL CTRL XTNT      80803020
                                80803030
*
089F 0 4334      DMLC1  BSI      3 52   BR TO MSAG FORM 2    MC 80803040
08A0 0 E062      DC       /E062     -- MSAG # --          80803050
08A1 1 0880      DC       DMLCK     ERR LDOP ADDR          80803060
08A2 0 70F3      MOX      DMLIC     BR TO CE CTRL WAIT      80803070
                                80803080
*
08A3 0 4334      DMLC2  BSI      3 52   BR TO MSAG FORM 2    MC 80803090
08A4 0 E063      DC       /E063     -- MSAG # --          80803100
08A5 1 0880      DC       DMLCK     ERR LOOP ADDR          80803110
08A6 0 70EF      MOX      DMLIC     BR TO CE CTRL WAIT      80803120
                                80803130
*
*
*.....*
* TEST RETURN CONTROL *
*.....*
*
08A7 1 C400 0805 DCRTN LD      L SW3      GET SW FNC 3 DATA   SC 80803140
08A9 0 1801      SRA      1          SHIFT TO CHECK 14    80803150
08AA 1 4C04 08AD BSC      L DCRHM,&E  BR IF BIT 14 IS ON   SC 80803160
08AC 0 4380      BSI      3 -128     BR TO DCARM RT      80803170
08AD 1 C400 0803 LD      L SW1      GET SW FNC 1 DATA    80803180
08AF 1 4C20 0879 BSC      L DCTL5,Z  BR IF FNC NOT ZERD 80803190
                                80803200
*
08B1 0 C319      LD      3 25      GET ROUTINE ID NUM     80803210
08B2 0 F3FD      EOR      3 -3      TEST FOR LAST RT     80803220
08B3 1 4C20 0869 BSC      L DCTL3,Z  BR TO CONTINUE TESTS 80803230
                                80803240
*
08B5 1 7401 08A0 MDX      L DCT&24,1  ADD TD PROG PASS CNT 80803250
08B7 0 1000      NOP      0          SAFTY NDP             80803260
                                80803270
*
08B8 0 1010      SLA      16        CLR ACC               80803280
08B9 0 D319      STD      3 25      CLR RT ID NUMBER      80803290
                                80803300
*
08BA 0 4350      BSI      3 80      BR TO MSAG FORM 4    MC 80803310
08BB 0 A001      DC       /A001     -- MSAG # --          80803320
                                80803330
                                80803340
                                80803350
                                80803360
                                80803370
                                80803380
                                80803390
                                80803400
                                80803410
```

2315 DISK INITIALIZER

```
*
08BC 0 4328      DCEOD BSI      3 40   BR TO MSG FORM 0    MC 80803420
08BD 0 AE0D      DC       /AE0D     -- MSAG # --          80803430
                                80803440
*
08BE 0 1000      DCRND NOP      0      STOP NOP           80803450
08BF 0 30ED      WAIT2 DC      /30ED  INIT END WAIT      80803460
                                80803470
*
* SEE BEGINNING OF 80803480
* LISTING FOR INST 80803490
* WAIT BRANCH LOOP 80803500
                                80803510
*
*.....*
* LOST INTERRUPT RT *
*.....*
*
08C1 1 6700 0888 DLNRT LD      L3 DCT      SET X3 CTRL ADDR   SE 80803520
08C3 0 C31B      LD      3 27      GET TIMER CNT         80803530
08C4 0 83FF      A       3 -1      ADD &1 TO CNT         80803540
08C5 0 D31B      STO      3 27     SAVE NEW CNT          80803550
08C6 0 F31C      EOR      3 28     TEST FOR LIMIT        80803560
08C7 0 4820      BSC      Z         Q. EQ TO LIMIT        80803570
08C8 0 700B      MOX      DLNRI     NO, PROCEED           80803580
                                80803590
*
08C9 0 088A      XID      3 -70     SENSE DSW             80803600
08CA 0 D308      STO      3 8       SET DSW IN DCT        80803610
08CB 0 43B1      BSI      3 -79     BR TO ERR MSAG RT     SC 80803620
08CC 0 4334      BSI      3 52     BR TO MSAG FORM 2     MC 80803630
08CD 0 E001      DC       /E001     -- MSAG # --          80803640
08CE 0 0000      DC       0        NO ERROR LOOP ADDR    80803650
                                80803660
*
08CF 0 1010      SLA      16        CLEAR ACCUM           80803670
08D0 0 D31B      STO      3 27     CLEAR LOST NTRPT CTR 80803680
08D1 0 438E      BSI      3 -114    RELEASE RT           SC 80803690
08D2 0 4386      BSI      3 -122    BR TO RE-ZERO ARM     SC 80803700
08D3 0 7098      MOX      DCTL4     BR TO RE-TRY ROUTINE SX 80803710
                                80803720
*
08D4 0 C31D      DLNRI LD      3 29   GET NXT MLN ENTRY   80803730
08D5 1 4C18 08D8 BSC      L DLAND,&-  BR 0 - NTRPT OCCURED 80803740
08D7 1 6700 08C1 LDX      L3 DLNRT  GET LST NTRPT RT ADR 80803750
08D9 1 6F00 0809 STX      L3 LIV   SET IT IN MLSCF        80803760
08DB 0 4C80 012D DLAND BSC      I START BR TO MONITOR     XM 80803770
                                80803780
*
*.....*
* DISK INTERRUPT ROUTINE *
*.....*
*
08DD 0 0000      DVA      DC      0      DISK AREA CODE ID PM 80803790
                                80803800
*
08DE 0 0000      NTRPT DC      0      SET X3 CTRL ADDR   SE 80803810
08DF 1 6700 0888 LDX      L3 DCT      80803820
                                80803830
*
08E1 0 0BBA      XID      3 -70     SENSE RESET DSW       80803840
08E2 0 D308      STO      3 8       SAVE IT IN T8L        80803850
                                80803860
*
08E3 0 C31D      LD      3 29      GET RETURN ADDR       80803870
08E4 1 D400 080B STO      L MLN     SET IT IN MLSCF        80803880
08E6 1 4C18 08F0 BSC      L NTRER,&- BR TO ERR RT IF ZERO 80803890
                                80803900
*
08E8 0 1010      NTRST SLA      16    CLR ACCUM           80803910
08E9 0 D306      STO      3 6       CLR FUNCTION         80803920
08EA 0 D31B      STO      3 27     CLR LST NTRPT CTR     80803930
08EB 0 D310      STO      3 29     CLR NTRPT ADDR DCT    80803940
08EC 1 D400 0809 STO      L LIV   CLR LST NTRPT RT XFR     80803950
                                80803960
*
08EE 1 4C80 08DE NTRXT BSC      I NTRPT  EXIT TO MONITOR   SX 80803970
                                80803980
*
08FO 0 70FF      NTRER MDX      NTRER  NO ML MLSCF ADDR   PH 80803990
                                80804000
                                80804010
                                80804020
                                80804030
                                80804040
                                80804050
                                80804060
                                80804070
                                80804080
                                80804090
```


2315 DISK INITIALIZER

```
0966 0 E008      DC      /E008      -- MSAG # --      80805460
0967 0 0000      DC      0          NO ERROR LODP ADDR      80805470
*
0968 0 C3E8      *      LD      3 -21      GET SW 1          80805480
0969 1 4C20 0973 *      BSC L DCR23,Z BR IF 2ND E008 PASS      80805490
*
0968 0 C30C      *      LD      3 12      GET 1ST AAR OF E008      80805500
096C 0 D00E      *      STO      DCRE1      SAVE IT          80805510
096D 0 C3CD      DCR22 LD      3 -51      GET 4000 HEX          80805520
096E 0 D3EB      *      STO      3 -21      SET SW 1 TO & DR -      80805530
*
096F 0 C3ED      *      LD      3 -32      GET SFT RD TEMP CNT.      80805540
0970 0 83FF      *      A      3 -1      ADD ONE TO ERRDR CNT      80805550
0971 0 D3E0      *      STO      3 -32      SET SW 1 TO & DR -      80805560
*
0972 0 70C9      *      MDX      DCR12      BR TO RE-READ ADDR      80805570
*
0973 0 C30C      DCR23 LD      3 12      GET 2ND AAR OF E008      80805580
0974 0 D007      *      STO      DCRE2      SAVE IT          80805590
0975 0 4386      *      BSI      3 -122      BR TO RE-ZERO ARM & SC      80805600
*
0976 1 7401 0898 *      MDX L DCT&19,1 ADD ONE TO RESK ERR      80805610
0978 0 1000      *      NOP      0          SAFTY NDP          80805620
*
0979 0 C38F      *      LD      3 -65      GET 8000 HEX XTNT      80805630
097A 0 70F3      *      MDX      DCR22&1 BR TO SET SW 1          80805640
*
0978 0 0000      DCRE1 DC      0          E008 AAR 1          80805650
097C 0 0000      DCRE2 DC      0          E008 AAR 2          80805660
*
097D 0 C3EB      DCRGA LD      3 -21      GET SW1          80805670
097E 1 4C10 0985 *      BSC L DCR0K,- BR IF RD ADDR OK          80805680
0980 0 C3E0      *      LD      3 -32      GET SFT RD ERR TEMP      80805690
0981 0 93FE      *      S      3 -2      COUNT & CORRECT IT      80805700
0982 0 D3E0      *      STD      3 -32      SAVE CORRECTED CNT      80805710
*
0983 0 4328      *      BSI      3 FDRM0-DCT BR TO MSAG FORM 0 MC      80805720
0984 0 A004      *      DC      /A004      -- MSAG # --      80805730
*
0985 1 7401 0830 *      DCRDK MDX L DRD,1 ADD TO EXIT RT OK          80805740
0987 0 C30C      *      LD      3 12      GET ACTUAL DISK ADDR      80805750
0988 0 D30A      *      STO      3 10      SET IT IN DCT PRESNT      80805760
0989 0 D309      *      STO      3 9       SET IT IN LAST GOOD      80805770
098A 0 C317      DCREL LD      3 23      GET TOTL HRD RD ERRS      80805780
098B 0 83DE      *      A      3 -34      ADD NEW HRD ERRS          80805790
098C 0 D317      *      STO      3 23      SAVE NEW TOTAL          80805800
098D 0 C316      *      LD      3 22      GET TOT SFT RD ERRS      80805810
098E 0 83E0      *      A      3 -32      ADD NEW SFT ERRS          80805820
098F 0 D316      *      STO      3 22      SAVE NEW TOTAL          80805830
*
0990 1 4C80 0830 *      DCRBB BSC I DRD EXIT TO CALL RT SX          80805840
* .....*
* .....*
* .....*
* .....*
*
0992 0 0000      *      CDTRT, DC      0          ENTRY          80805850
0993 0 1010      *      SLA      16      CLR ACC          SE      80805860
0994 0 D30E      *      STO      3 14      CLR RETRY CTR          80805870
*
0995 0 4388      *      CDTBC BSI      3 -120      DCRDY RT          SC      80805880
*
0996 0 C30D      *      LD      3 13      GET WORD COUNT          80805890
0997 1 D400 0C55 *      STO L DCDA      SET IT IN I/O FLD          80805900
0999 0 C3DF      *      LD      3 -33      GET MEM HLD FNC          80805910
099A 0 D306      *      STO      3 6       SET IT IN DCT FNC WD          80805920
099B 0 C308      *      LD      3 11      GET DESIRED ADDR          80805930
099C 0 100D      *      SLA      13      CLR CYL NUMBER          80805940
099D 0 180D      *      SRA      13      CLR CYL NUMBER          80805950
```

2315 DISK INITIALIZER

```
099E 0 EB1A      DR      3 26      RD/RD CK MODIFIER      80806140
099F 0 D307      STO      3 7       SET ADJ MOD IN DCT      80806150
09A0 0 C301      LD      3 1       GET I/O ADDR          80806160
09A1 0 D304      STO      3 4       SET IT IN DCT          80806170
*
09A2 0 4392      *      CDTRC BSI      3 -11D      DCDSW RT          SC      80806180
*
09A3 0 E3C5      *      AND      3 -59      TEST BITS          80806190
09A4 1 4C18 09AD *      BSC L CDTSE,&- BR ZERO TO CONTINUE      80806200
*
09A6 0 43B1      *      BSI      3 -79      BR TO ERR MSAG RT          SC      80806210
09A7 0 432E      *      BSI      3 46      BR TO MSAG FORM 1          MC      80806220
09A8 0 E005      *      DC      /E005      -- MSAG # --          80806230
09A9 1 09A2      *      DC      CDTRC      ERR LODP ADDR          80806240
*
09AA 0 0BBA      *      XIO      3 -70      SENSE RESET DSW          80806250
09AB 0 D308      *      STO      3 8       SET DSW IN DCT          80806260
09AC 0 4396      *      BSI      3 -106      BR TO MONITDR END          SX      80806270
*
09AD 0 C3B7      *      CDTSE LD      3 -73      GET RETURN ADDR          80806280
09AE 0 D31D      *      STO      3 29      SET IT IN DCT          80806290
*
09AF 0 4382      *      BSI      3 -126      BR TO EXEQ RT          SC      80806300
*
0980 0 439C      *      BSI      3 -100      MONITOR START RT          XM      80806310
*
0981 1 6700 0888 *      CDTNR LDX L3 DCT SET X3 CTRL ADDR          SE      80806320
0983 0 C300      *      LD      3 0       GET ZERO XTNT          80806330
0984 0 D307      *      STO      3 7       CLR MODIFIER          80806340
*
0985 0 438E      *      BSI      3 -114      RELEASE RT          SC      80806350
*
0986 1 4C80 0992 *      BSC I CDTRT EXIT TO CALL RT          SX      80806360
*
* ***** ** CHECK DSW RD/WR ** *
*
0988 0 0000      *      CDTSN DC      0          ENTRY          80806370
0989 0 C308      *      LD      3 8       GET DSW IN DCT          SE      80806380
098A 0 E3C5      *      AND      3 -59      PASS TEST BITS          80806390
098B 0 F3CD      *      EOR      3 -51      TEST ALL FOR OK          80806400
098C 1 4C18 09DA *      BSC L CDTGX,&- BR ZERO ALL OK          80806410
*
098E 1 C400 0C56 *      LD L DCDA&1 GET ACTUAL ADDR          80806420
09C0 0 D30C      *      STO      3 12      SET ADDR IN DCT TBL      80806430
*
09C1 0 43B1      *      BSI      3 -79      BR TO ERR MSAG RT          SC      80806440
09C2 0 4334      *      BSI      3 52      BR TO MSAG FDRM 2          MC      80806450
09C3 0 E006      *      DC      /E006      -- MSAG # --          80806460
09C4 0 0000      *      DC      0          NO ERR LODP ADDR          80806470
*
09C5 1 C400 0805 *      LD L SW3 GET SW FNC 3 DATA          80806480
09C7 0 4804      *      BSC E SKIP IF EVEN          80806490
09C8 0 7015      *      MDX DSPLA BR TO DISPLAY IDA RT          80806500
*
09C9 1 7401 0868 *      CDTLK MDX L DCT-32,1 ADD TO SFT ERR HDLDR          80806510
09CB 0 1000      *      NOP      0          SAFTY NDP          80806520
09CC 0 C30E      *      LD      3 14      GET ERR TRY CTR          80806530
09CD 0 83FF      *      A      3 -1      ADD TO TRY CTR          80806540
09CE 0 D30E      *      STD      3 14      SAVE CTR TOTL          80806550
09CF 0 F3F6      *      EDR      3 -10      TEST FOR TENTH TRY          80806560
09D0 1 4C20 0995 *      BSC L CDTBC,Z LOOP TO RETRY AUTO          80806570
*
09D2 1 7401 0866 *      MDX L DCT-34,1 ADD TO HRD ERR HDLDR          80806580
09D4 0 1000      *      NOP      0          SAFTY NDP          80806590
*
09D5 0 43B1      *      BSI      3 -79      BR TO ERR MSAG RT          SC      80806600
09D6 0 432E      *      BSI      3 46      BR TO MSAG FDRM 1          MC      80806610
09D7 0 E007      *      DC      /E007      -- MSAG # --          80806620
```

Address	Op	Op1	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418
---------	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Address	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464	Op465	
---------	----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--

2315 DISK INITIALIZER

```
*.....*
*
OA4A 1 7401 0B39 EMNRT MDX L EMF,1 ADJ FOR MSAG NUM SE
OA4C 1 C480 0B39 LD I EMF GET BASIC MSAG NUM
OA4E 0 E3C4 AND 3 -60 PASS VALIO BITS
OA4F 0 83DF A 3 -33 ADD IN RD / WR CODE
OA50 1 0480 0B39 STO I EMF SET IT IN MSAG RT
OA52 1 74FF 0B39 MDX L EMF,-1 ADJ FOR RETURN ADDR
OA54 1 4C80 0B39 BSC I EMF RETURN TO CALL RT SX
*.....*
```

13 SD DCARM ROUTINE

```
*.....*
*
OA56 0 C3FF DHOME LD 3 -1 GET INCR OF ONE
OA57 0 D302 STO 3 2 SAVE INCREMENT
OA58 0 D304 STO 3 4 SAVE INCREMENT
OA59 0 1010 SLA 16 CLEAR A REG
OA5A 0 D30A STO 3 10 SET ADDR TO ZERO
OA5B 0 D3E9 STO 3 -23 CLEAR TRY CNTR
OA5C 0 C322 DHMLE LD 3 34 BET INST /X404
OA5D 0 D306 STO 3 6 SET IT IN DCT
OA5E 1 6500 OA64 LDX L1 DHMNR GET RETURN ADDR
OA60 1 6D00 OA65 STX L1 DCT&29 SET IT IN DCT
OA62 0 4382 BSI 3 -126 BR TO EXEQ RT SC
OA63 0 439C BSI 3 -100 BR TO MON START XM
*.....*
```

```
*
*
OA64 1 6700 0B88 DHMNR LDX L3 DCT SET BASIC CTRL ADDR
OA66 0 438E BSI 3 -114 BR TO REL CHANNEL SC
OA67 0 C3E9 LD 3 -23 GET CNTR
OA68 0 83FF A 3 -1 ADD ONE
OA69 0 D3E9 STO 3 -23 SAVE NEW TOTAL
OA6A 0 F3E7 EOR 3 -25 TEST FOR MAX 204 CNT
OA6B 1 4C18 OA97 BSC L DARMC,&- BR TO MSAG IF ZERO
OA6D 0 4392 BSI 3 -110 BR TO SENSE OSW SC
OA6E 0 1004 SLA 4 CHECK FOR HOME BIT
OA6F 1 4C28 OA9C BSC L DARMZ,Z& BR IF HOME BIT ON
OA71 0 70EA MOX DHMLE BR LOOP
*.....*
```

13 SD RE-ZERO ARM RTN

```
*
*
OA72 0 C308 DRASK LD 3 11 GET DESIRED ADOOR
OA73 0 D3E6 STO 3 -26 SAVE IT
OA74 0 4380 BSI 3 -128 BR TO DCARM RTN
*.....*
```

```
*
*
OA75 1 4C00 OA02 BSC L DRSKX BR TO RETURN TO USER
*.....*
```

SEEK ADJ CYL 089 / 111

```
*.....*
*
OA77 0 C308 SKADJ LD 3 11 GET DESIRED ADOOR SE
OA78 0 930C S 3 12 SUB PRESENT ADOOR
OA79 0 4808 BSC & SKIP IF POSITIVE
OA7A 0 7003 MOX SKOUT BR TO NEGATIVE RT
*.....*
```

```
*
*
OA7B 0 C3E2 LD 3 -30 GET CYL 111
OA7C 0 D30B STO 3 11 SET ADDR
OA7D 0 7002 MOX SKOUT&2 BR TO BR BACK
*.....*
```

```
*
*
OA7E 0 C3E3 SKOUT LD 3 -29 GET CYL 089
OA7F 0 D30B STO 3 11 SET ADDR
OA80 1 4C00 OA86 BSC L OCBPR BR TO USER RT SX
*.....*
```

80808180
80808190
80808200
80808210
80808220
80808230
80808240
80808250
80808260
80808270
80808280
80808290
80808300
80808310
80808320
80808330
80808340
80808350
80808360
80808370
80808380
80808390
80808400
80808410
80808420
80808430
80808440
80808450
80808460
80808470
80808480
80808490
80808500
80808510
80808520
80808530
80808540
80808550
80808560
80808570
80808580
80808590
80808600
80808610
80808620
80808630
80808640
80808650
80808660
80808670
80808680
80808690
80808700
80808710
80808720
80808730
80808740
80808750
80808760
80808770
80808780
80808790
80808800
80808810
80808820
80808830
80808840
80808850

2315 DISK INITIALIZER

```
OA82 0 0000
OA83 0 0BBC
OA84 0 100D
OA85 1 4C90 OA82
OA87 1 7401 OA82
OA89 1 4CA8 OA82
```

```
OA8B 1 4400 OA82
OA8D 0 70C8
```

```
OA8E 0 C300
OA8F 0 D30B
OA90 0 C3CF
OA91 0 D30A
OA92 0 43AE
```

```
OA93 0 4392
OA94 0 1004
OA95 1 4C28 OA9C
```

```
OA97 0 43B1
```

```
OA98 0 432E
OA99 0 E003
OA9A 1 0A8B
```

```
OA9B 0 4396
```

```
OA9C 1 4C80 0B08
```

```
OA9E 0 438A
```

```
OA9F 0 C3B9
AAA0 1 0400 0B09
```

```
AAA2 0 C305
AAA3 0 EB06
AAA4 0 EB07
AAA5 0 1890
```

```
AAA6 0 C304
```

```
AAA7 0 D804
```

```
AAA8 0 0803
```

```
AAA9 1 4C80 0B0A
```

```
OAAC 0002
```

```
OAAE 0 C30B
```

```
*.....*
*
DISK CHECK & SW RTN A OR C
*.....*
ADSKC DC 0 ENTRY
XIO 3 -68 GET DSK DSW
SLA 13 CK 8IT 13 FOR TYPE
BSC I ADSKC,- BR RTRN IF DSK A 13
MDX L ADSKC,1 ADV FOR RETURN
BSC I ADSKC,Z& BR RTRN IF DSK A 44
*.....*
```

FAR ARM TO HOME RT

```
*.....*
*
DCARM BSI L ADSKC BR TO 13/44 DRTN SEC
MDX DHOME BR TO 13 SD SECTION
*.....*
```

```
*
*
DARMA LD 3 0 GET DESIRED DSK ADDR
STO 3 11 SET IT IN DCT
LD 3 -49 GET PSEUDO PRESENT
STO 3 10 SET IT IN DCT
BSI 3 -82 BR TO SEEK SUB RT
*.....*
```

```
*
*
BSI 3 -110 BR TO SENSE DSK DSW SC
SLA 4 SHIFT TO CK HOME BIT
BSC L DARMZ,Z& BR IF HOME BIT ON
*.....*
```

```
*
*
DARMC BSI 3 -79 BR TO ERR MSAG RT SC
*.....*
```

```
*
*
BSI 3 46 BR TO MSAG FORM 1 MC
DC /E003 -- MSAG # --
DC DCARM ERROR LOOP ADDR
*.....*
```

```
*
*
BSI 3 -106 BR TO MONITOR END PX
*.....*
```

```
*
*
DARMZ BSC I ARM RETURN TO CALLING RT SX
*.....*
```

COMMON EXEQUITE I/O RT

```
*.....*
*
DEXEQ BSI 3 -118 REQUEST ODEVICE SC
*.....*
```

```
*
*
**** ** ** MAIN LINE MUST RELEASE*
*.....*
```

```
*
*
LO 3 -71 GET NTRPT TIMR ADDR
STO L LIV SET IN MLSCF TBL
*.....*
```

```
*
*
LD 3 5 GET AREA CODE
OR 3 6 SET IN FUNCTION
OR 3 7 SET IN MODIFIER
SRT 16 PUT XIO IN Q REG
*.....*
```

```
*
*
LD 3 4 GET ADDR / INCREMENT
*.....*
```

```
*
*
STD DEXIO SET IOCC WORD
*.....*
```

```
*
*
XIO DEXIO OO I/O COMMAND
*.....*
```

```
*
*
BSC I EXQ EXIT RETURN SX
*.....*
```

```
*
*
DEXIO 8SS E 2 IOCC WORD PM
*.....*
```

ADDR BYPASS CK RT

```
*.....*
*
OCABP LO 3 11 GET DESIRED ADDR SE
*.....*
```

80808860
80808870
80808880
80808890
80808900
80808910
80808920
80808930
80808940
80808950
80808960
80808970
80808980
80808990
80809000
80809010
80809020
80809030
80809040
80809050
80809060
80809070
80809080
80809090
80809100
80809110
80809120
80809130
80809140
80809150
80809160
80809170
80809180
80809190
80809200
80809210
80809220
80809230
80809240
80809250
80809260
80809270
80809280
80809290
80809300
80809310
80809320
80809330
80809340
80809350
80809360
80809370
80809380
80809390
80809400
80809410
80809420
80809430
80809440
80809450
80809460
80809470
80809480
80809490
80809500
80809510
80809520
80809530

2315 DISK INITIALIZER

PART NO. 2196374
PAGE 8

```
OAAF 0 93EC          S    3 -20      SUB CYL 90      80809540
OAB0 1 4C28 OAB6     8SC  L  DCBPR,Z&  8R IF LESS THAN 80809550
*                                     80809560
OAB2 0 C30B          LD    3 11      GET DESIRED ADDR 80809570
OAB3 0 93EA          S    3 -22      SUB CYL 110     80809580
OAB4 0 4808          8SC    &        SKIP IF GREATER THAN 80809590
*                                     80809600
OAB5 0 70C1          MDX    SKADJ     BR TO GET CYL &/- 80809610
*                                     80809620
OAB6 1 4C80 080C     DC8PR 8SC  I  A8P     EXIT TO CALL RT  SX 80809630
*                                     80809640
*                                     80809650
*.....*
*          FAR RESTORE ARM RT          *
*.....*
*                                     80809670
*                                     80809680
*                                     80809690
OAB8 0 4388          DRESK 8SI   3 -120    8R TO DISK READY RT SEC 80809700
OAB9 1 4400 OAB2     8SI   L  ADSKC     BR TO 13/44 DRTN 80809710
OAB8 0 70B6          MDX    DRASK       BR TO 13 SD SECTION 80809720
*                                     80809730
OABC 0 C308          LO    3 11      GET DESIRED ADDR 80809740
OABD 0 D3E6          STO    3 -26     SAVE DESIRED ADDR 80809750
OABE 0 10A0          SLT    32        CLEAR A & Q      80809760
OABF 0 080A          STD    3 10      SET DESIRED & PRSNT 80809770
OAC0 0 0304          STO    3 4       RESET ADDR      80809780
OAC1 0 C321          ORERT LD    3 33   GET SEEK INST  80809790
OAC2 0 0306          STO    3 6       SET IT IN OCT    80809800
OAC3 0 D30F          STO    3 -33     SET IT IN MEM FNC 80809810
OAC4 0 C386          LD    3 -74     GET NTRPT XFER ADDR 80809820
OAC5 0 0310          STO    3 29     SET IT IN DCT    80809830
OAC6 0 4382          BSI    3 -126    BR TO EXEQ OSK OP  SC 80809840
OAC7 0 439C          BSI    3 -100    8R TO MONITOR START XM 80809850
*                                     80809860
OAC8 1 6700 0B88     ORSKR LOX  L3 OCT    RESET X3 CTRL ADOR  RM 80809870
OACA 0 438E          BSI    3 -114    8R TO REL CHAN RT  SC 80809880
OAC8 0 C308          LO    3 8       GET OSW        80809890
OACC 0 E3C3          AND    3 -61     PASS TEST 8ITS   80809900
OACD 0 F3CC          EOR    3 -52     TEST FOR OK PATTERN 80809910
OACE 1 4C20 0C48     BSC  L  RSTRT,Z  BR HOME 8IT NOT ON 80809920
*                                     80809930
OAO0 0 1010          SLA    16        CLEAR A REG     80809940
OAD1 0 03EF          STO    3 -17     RESET RETRY CNTR 80809950
OAD2 0 C3E6          LD    3 -26     GET DESIRED ADDR 80809960
OAD3 0 030B          STO    3 11     SET ADDR IN DCT 80809970
OAD4 1 4C80 080E     BSC  I  RSK      RETURN TO CALLING RT SX 80809980
*                                     80809990
*.....*
*          ROY-NOT8USY-OK CK RT        *
*.....*
*                                     80810000
*                                     80810010
*                                     80810020
OAO6 0 4392          DCRDY BSI   3 -110    DCDSW RT      SEC 80810030
OAO7 0 180C          SRA    12        SHIFT FOR B0-83 80810040
OAO8 1 4C98 0810     BSC  I  RDY,&-    EXIT            SX 80810050
*                                     80810060
*                                     80810070
OAOA 0 4381          8SI    3 -79     8R TO ERR MSAG RT  SC 80810080
OAO8 0 432E          BSI    3 46      BR TO MSAG FORM 1  MC 80810090
OADC 0 E002          DC     /E002     -- MSAG # -- 80810100
OADD 0 0000          DC     0         NO ERR LOOP ADOR 80810110
OADE 0 70F7          MDX    OCROY     8R TO PRINT AGAIN 80810120
*                                     80810130
*.....*
*          CHANNEL REQUEST RT          *
*.....*
*                                     80810140
*                                     80810150
*                                     80810160
OAOF 0 4480 0131     CHNRQ 8SI   I  REQDV    CHANNEL REQUEST RT SEC 80810170
OAE1 1 0A44          OC     CHNBZ     BUSY RT ADOR    80810180
OAE2 0 0000          CHNSA OC     0       ODEF ADOR    80810190
OAE3 1 08D0          OC     OVA       DEVICE REF ADOR 80810200
*                                     80810210
```

2315 DISK INITIALIZER

PART NO. 2196374
PAGE 8A

```
OAE4 1 080C          DC    TERM      ADDR OF/FFFF 80810220
OAE5 1 6700 0888     LOX  L3 OCT      SET X3 CTRL ADOR 80810230
OAE7 1 4C80 0812     BSC  I  REQ      EXIT TO CALL RT  SX 80810240
*                                     80810250
*                                     80810260
*.....*
*          FILL I/O AREA RT          *
*.....*
*                                     80810270
*                                     80810280
OAE9 0 6500 FEC0     DFILL LDX  L1 -320    SET PASS CTRL  SE 80810290
OAE8 1 0500 0D97     STO  L1 0CDA&322    RESET IOA WITH ACC 80810300
OAE9 0 7101          MDX    1 1        OEC CTRL      80810310
OAE8 0 70FC          MOX    DFILL&2     LOOP          80810320
OAEF 1 4C80 0B14     BSC  I  FLX      EXIT            SX 80810330
*                                     80810340
*                                     80810350
*                                     80810360
*.....*
*          CHANNEL RELEASE RT        *
*.....*
*                                     80810370
*                                     80810380
OAF1 0 4480 0132     CHNRL BSI   I  RELDV    CHANNEL RELEASE RT SEC 80810390
OAF3 0 0000          CHNRA DC     0       DDEF ADOR      80810400
OAF4 1 080C          DC    TERM      ADDR OF /FFFF 80810410
OAF5 1 6700 0B88     LDX  L3 DCT      SET X3 CTRL ADOR 80810420
OAF7 1 4C80 0816     BSC  I  REL      EXIT TO CALL RT  SX 80810430
*                                     80810440
*                                     80810450
*                                     80810460
*.....*
*          DISK DELAY ROUTINE        *
*.....*
*                                     80810470
*                                     80810480
OAF9 0 71FF          DCOLA MDX   1 -1      DEC NOX -1    SE 80810490
OAF8 0 70FE          MOX    *-2        LOOP IF NOT ZERO 80810500
OAFB 0 C3C0          LD    3 -64      GET ADDR OF RETURN SE 80810510
OAFD 1 0400 080B     STO  L  MLN      SET ADDR IN MLSCF 80810520
OAFE 0 439C          8SI    3 -100     BR TO MON START  XM 80810530
OAF7 1 6700 0B88     DLABB LDX  L3 OCT    SET X3 CTRL ADOR 80810540
OAF8 1 4C80 0816     BSC  I  DLA      EXIT TO CALL RT  SX 80810550
*                                     80810560
*                                     80810570
*.....*
*          READ OSW ROUTINE          *
*.....*
*                                     80810580
*                                     80810590
OAO3 0 088C          OCDSW XID   3 -68    READ OSW      SE 80810600
OAO4 0 0308          STO    3 8       SAVE OSW        80810610
OAO5 1 4C80 0B1A     BSC  I  OSW      RETURN TO CALL RT  SX 80810620
*                                     80810630
*                                     80810640
*.....*
*          X3 - COMMON XFER TABLE  *
*.....*
*                                     80810650
*                                     80810660
*                                     80810670
*                                     80810680
*                                     80810690
*                                     80810700
OAO8 0 0000          8SS  E  0         -128          80810710
OAO8 0 0000          OC    0           -128          80810720
OAO9 0 7081          MDX    DCARM      SC            80810730
*                                     80810740
OAOA 0 0000          EXQ  OC    0       -126          80810750
OAO8 0 7092          MDX    DEXEQ     SC            80810760
*                                     80810770
OAO8 0 0000          A8P  OC    0       -124          80810780
OAO8 0 70A0          MDX    DCABP     SC            80810790
*                                     80810800
OAO8 0 0000          RSK  OC    0       -122          80810810
OAO8 0 70A8          MDX    DRESK     SC            80810820
*                                     80810830
OAO8 0 0000          ROY  OC    0       -120          80810840
OAO8 0 70C4          MDX    DCRDY     SC            80810850
*                                     80810860
OAO8 0 0000          REQ  OC    0       -118          80810870
OAO8 0 70CB          MDX    CHNRQ     SC            80810880
*                                     80810890
```


2315 DISK INITIALIZER

PART NO. 2196374
PAGE 9

0B14 0 0000	FLX	DC	0	-116	80810900
0B15 0 70D3		MDX	DFILL	SC	80810910
	*				80810920
0B16 0 0000	REL	DC	0	-114	80810930
0B17 0 70D9		MDX	CHNRL	SC	80810940
	*				80810950
0B18 0 0000	DLA	DC	0	-112	80810960
0B19 0 70DF		MDX	DCDLA	SC	80810970
	*				80810980
0B1A 0 0000	DSW	DC	0	-110	80810990
0B1B 0 70E7		MDX	DCDSW	SC	80811000
	*				80811010
0B1C 0 0000	HNG	DC	0	-108	80811020
0B1D 0 70FF		MDX	*-1	SC	80811030
	*				80811040
0B1E 0 0000	MEND	DC	0	-106	80811050
0B1F 0 4C80 012E		BSC	I END	PXM	80811060
	*				80811070
0B21 0 0000		DC	0	-103	80811080
0B22 1 4C00 0C3B		BSC	L COUNT	SC	80811090
	*				80811100
0B24 0 0000	STRT	DC	0	-100	80811110
0B25 0 4C80 012D		BSC	I START	XM	80811120
	*				80811130
0B27 0 0000	RTN	DC	0	-97	80811140
0B28 1 4C00 08A7		BSC	L DCRTN	SC	80811150
	*				80811160
0B2A 0 0000	REST	DC	0	-94	80811170
0B2B 1 4C00 0859		BSC	L DCTRL	SC	80811180
	*				80811190
0B2D 0 0000	DEND	DC	0	-91	80811200
0B2E 1 4C00 08BC		BSC	L DCEDD	SC	80811210
	*				80811220
0B30 0 0000	DRD	DC	0	-88	80811230
0B31 1 4C00 0936		BSC	L DCRD	SC	80811240
	*				80811250
0B33 0 0000	DWR	DC	0	-85	80811260
0B34 1 4C00 091A		BSC	L DCWR	SC	80811270
	*				80811280
0B36 0 0000	DSK	DC	0	-82	80811290
0B37 1 4C00 09EE		BSC	L DCSK	SC	80811300
	*				80811310
0B39 0 0000	EMF	DC	0	-79	80811320
0B3A 1 4C00 0A4A		BSC	L EMNRT	SC	80811330
	*				80811340
	*				80811350
	*				80811360
	*				80811370
	*				80811380
0B3C 1 0859		DC	DCTRL	-76	80811390
0B3D 1 085F		DC	DCTL2	-75	80811400
0B3E 1 0AC8		DC	DRSKR	-74	80811410
0B3F 1 09B1		DC	CDTNR	-73	80811420
0B40 1 0A06		DC	DSKNR	-72	80811430
0B41 1 08C1		DC	DLNRT	-71	80811440
0B42 0 0000		DC	/0000	-70	80811450
0B43 0 0701		DC	/0701	-69	80811460
0B44 0 0000		DC	/0000	-68	80811470
0B45 0 0700		DC	/0700	-67	80811480
0B46 0 0658		DC	/0658	-66	80811490
0B47 0 8000		DC	/8000	-65	80811500
0B48 1 0AFF		DC	DLABB	-64	80811510
0B49 0 0100		DC	/0100	-63	80811520
0B4A 0 FFFF		DC	/FFFF	-62	80811530
0B4B 0 FFF8		DC	/FFF8	-61	80811540
0B4C 0 F0FF		DC	/F0FF	-60	80811550
0B4D 0 F7F8		DC	/F7F8	-59	80811560
0B4E 0 E5E5		DC	/E5E5	-58	80811570

X3 - COMMDN XTNT REF TBL *

PATTERN ZERO

2315 DISK INITIALIZER

PART NO. 2196374
PAGE 9A

0B4F 0 CEDC	DC	/CEDC	-57	80811580	
0B50 0 0000	DC	/0000	-56	80811590	
0B51 0 0700	DC	/0700	-55	80811600	
0B52 0 7000	DC	/7000	-54	80811610	
0B53 0 6400	DC	/6400	-53	80811620	
0B54 0 4800	DC	/4800	-52	80811630	
0B55 0 4000	DC	/4000	-51	80811640	
0B56 0 0000	DC	/0000	-50	80811650	
0B57 0 0657	DC	/0657	-49	80811660	
0B58 0 1313	DC	/1313	-48	80811670	
0B59 0 1000	DC	/1000	-47	80811680	
0B5A 0 0000	DC	/0000	-46	80811690	
0B5B 0 0700	DC	/0700	-45	80811700	
0B5C 0 0000	DC	0	-44	80811710	
0B5D 0 0000	DC	0	-43	80811720	
0B5E 0 0000	DC	0	-42	80811730	
0B5F 0 0000	DC	0	-41	80811740	
0B60 0 0000	DC	0	-40	80811750	
0B61 0 0000	DC	0	-39	80811760	
0B62 0 0000	DC	0	-38	80811770	
0B63 0 0000	DC	0	-37	80811780	
0B64 0 0000	DC	0	-36	80811790	
0B65 0 0000	DC	0	-35	80811800	
0B66 0 0000	DC	0	-34	80811810	
0B67 0 0000	DC	0	-33	80811820	
0B68 0 0000	DC	0	-32	80811830	
0B69 0 0000	DC	0	-31	80811840	
0B6A 0 0378	DC	/0378	-30	80811850	
0B6B 0 02CF	DC	/02CF	-29	80811860	
0B6C 0 0000	DC	0	-28	80811870	
0B6D 0 0141	DC	321	-27	80811880	
0B6E 0 0000	DC	0	-26	80811890	
0B6F 0 00CC	DC	204	-25	80811900	
0B70 0 00C8	DC	200	-24	80811910	
0B71 0 0000	DC	0	-23	80811920	
0B72 0 0377	DC	/0377	-22	80811930	
0B73 0 0000	DC	0	-21	80811940	
0B74 0 02D0	DC	/02D0	-20	80811950	
0B75 0 0018	DC	24	-19	80811960	
0B76 0 0000	DC	0	-18	80811970	
0B77 0 0000	DC	0	-17	80811980	
0B78 0 0010	DC	16	-16	80811990	
0B79 0 000F	DC	15	-15	80812000	
0B7A 0 000E	DC	14	-14	80812010	
0B7B 0 000D	DC	13	-13	80812020	
0B7C 0 000C	DC	12	-12	80812030	
0B7D 0 000B	DC	11	-11	80812040	
0B7E 0 000A	DC	10	-10	80812050	
0B7F 0 0009	DC	9	-9	80812060	
0B80 0 0008	DC	8	-8	80812070	
0B81 0 0007	DC	7	-7	80812080	
0B82 0 0006	DC	6	-6	80812090	
0B83 0 0005	DC	5	-5	80812100	
0B84 0 0004	DC	4	-4	80812110	
0B85 0 0003	DC	3	-3	80812120	
0B86 0 0002	DC	2	-2	80812130	
0B87 0 0001	DC	1	-1	80812140	
	*		*	80812150	
	*		*	80812160	
	*		*	80812170	
	*		*	80812180	
	*		*	80812190	
0B88 0 0000	DCT	DC	/0000	0	80812200
0B89 1 0C55		DC	DCDA	1	80812210
0B8A 0 0000		DC	0	2	80812220
0B8B 0 0000		DC	0	3	80812230
0B8C 0 0000		DC	0	4	80812240
0B8D 0 0000		DC	0	5	80812250

X3 - DISK CTRL TABLE

ZERO CONSTANT

READ DATA AREA FLD 1

SEEK INCR CALC HLD 2

SK - WR - RD SWCTL 3

I/O AREA / CYL INC 4

AREA CODE 5

0B8E	0	0000	DC	0	FUNCTION	6	80812260
0B8F	0	0000	OC	0	MODIFIER	7	80812270
0B90	0	0000	DC	0	LAST DSW READ	8	80812280
0B91	0	0000	DC	0	LAST GOOD CYL READ	9	80812290
0B92	0	0000	DC	0	PRESENT CYL	10	80812300
0B93	0	0000	OC	0	DESIRED CYL HDOR	11	80812310
0B94	0	0000	OC	0	ACTUAL AQR READ	12	80812320
0B95	0	0000	OC	0	CURRENT WORD CNT	13	80812330
0B96	0	0000	DC	0	RD-WR ERR TRY CTR	14	80812340
0B97	0	0000	DC	0	SEEK ERR TRY CTR	15	80812350
0B98	0	0000	DC	0	TOTAL SEEKS	16	80812360
0B99	0	0000	DC	0	TOTAL WRITES	17	80812370
0B9A	0	0000	DC	0	TOTAL REAOS	18	80812380
0B9B	0	0000	DC	0	TOTAL SEEK ERRORS	19	80812390
0B9C	0	0000	DC	0	TOT SFT WR ERRORS	20	80812400
0B9D	0	0000	DC	0	TOT HRD WR ERRORS	21	80812410
0B9E	0	0000	DC	0	TOT SFT RD ERRORS	22	80812420
0B9F	0	0000	OC	0	TOT HRD RD ERRORS	23	80812430
0BA0	0	0000	DC	0	TOT PROG PASSES	24	80812440
0BA1	0	0000	OC	0	ROUTINE EXEQ NUM	25	80812450
0BA2	0	0000	DC	0	RO-ROCK MOOE CODE	26	80812460
0BA3	0	0000	OC	0	LOST TIME DLA CTR	27	80812470
0BA4	0	0FFF	DC	/0FFF	LOST TIME DLA XNT	28	80812480
0BA5	0	0000	OC	0	NTRUPT RTRN ADDR	29	80812490
0BA6	0	0000	OC	0	WD NUM OF PAT ERR	30	80812500
0BA7	0	0000	OC	0	DESIRED PATTERN	31	80812510
0BA8	0	0000	DC	0	ACTUAL PATTERN	32	80812520
0BA9	0	0400	OC	/0400	DIRECT ACCESS SK	33	80812530
0BAA	0	0404	DC	/0404	SEEK OUT	34	80812540
0BAB	0	0500	OC	/0500	DISK WRITE DATA	35	80812550
0BAC	0	0600	DC	/0600	DISK READ DATA	36	80812560
0BAD	0	0608	DC	/0608	DISK READ CHECK	37	80812570
0BAE	0	0700	OC	/0700	DISK SENSE NORSET	38	80812580
0BAF	0	0701	DC	/0701	DISK SENSE RESET	39	80812590

```

*
* .....
*                X3 - MSAG REF TBL
* .....
*
* .....
*                MSAG FORMAT ROUTINE
* .....
*

```

Address	Hex	Label	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	
---------	-----	-------	----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--

DATE	28FEB66	01MAY66	01JUL66	04NOV66	01OCT67	01NOV67	02DEC68	PROG ID	0808-1
EC NO.	415120	415120A	415178	415233	411875	411875A	411961	PAGE	10

Address	Operation	Source	Destination	Count	Modifier	Comment	Address
0BC8 0 006C	STO		DCOUT&4			SET CYL IN MODIFIER	80812940
0BC9 0 C308	DCFMB	LD	3 8			LAST DSW	80812950
0BCA 0 D069		STO	OCOUT&3			SET OSW IN MODIFIER	80812960
0BCB 0 7037		MDX	OCOSW			BRNCH TO OUTPUT CALL	80812970
	*						80812980
0BCC 0 0000	FORM3	OC	0			SAVE ENTRY ADDR	80812990
0BCD 1 6580	OBCC	LOX	11 FORM3			SAVE ADDR FOR RTRN	80813000
0BCF 0 C3F9		LO	3 -7			GET WORD COUNT	80813010
0BD0 0 D060		STO	OCOUT			PUT IT IN MSAG OPA	80813020
0BD1 0 C31E		LD	3 30			WC OF ERROR DATA	80813030
0BD2 0 D065		STO	OCOUT&7			SET WEC IN MODIFIER	80813040
0BD3 0 C31F		LO	3 31			EXPECTED WORD	80813050
0BD4 0 D064		STO	OCOUT&8			SET EXP IN MODIFIER	80813060
0BD5 0 C320		LO	3 32			ACTUAL WORD	80813070
0BD6 0 D063		STO	OCOUT&9			SET ACT IN MODIFIER	80813080
0BD7 0 70EB		MOX	OCFMA			BR TO FINISH SETUP	80813090
	*						80813100
0BD8 0 0000	FORM4	OC	0			SAVE ENTRY ADDR	80813110
0BD9 1 6580	OB08	LOX	11 FORM4			SAVE ADDR FOR RTRN	80813120
0B0B 0 C3FD		LD	3 -3			GET WORD COUNT	80813130
0BDC 0 D054		STO	OCOUT			PUT IT IN MSAG OPA	80813140
0BD0 0 C3CB		LO	3 -53			GET BR INST	80813150
0BDE 0 D049		STO	DCELS			PUT IN NOP / BR INST	80813160
0BDF 0 C318		LD	3 24			PROG. EXECUTIONS	80813170
0BE0 0 D053		STO	OCOUT&3			MODIFIER NO. 1	80813180
0BE1 0 C310		LO	3 16			TOTAL SEEKS	80813190
0BE2 0 D052		STO	OCOUT&4			MODIFIER NO. 2	80813200
0BE3 0 C313		LD	3 19			SEEK ERRORS	80813210
0BE4 0 D051		STO	OCOUT&5			MODIFIER NO. 3	80813220
0BE5 1 6600	0BE9	LOX	L2 FRM4A			GET ALTERNATE RETURN	80813230
0BE7 0 6A41		STX	2 OCELS&1			PUT IN ADDRESS	80813240
0BE8 0 701A		MOX	OCOSW			BRNCH TO OUTPUT CALL	80813250
0BE9 0 C047	FRM4A	LD	OCOUT			LINE NO. & WORD CT.	80813260
0BEA 0 83C1		A	3 -63			INCREMENT LINE NO.	80813270
0BEB 0 D045		STO	DCOUT				80813280
0BEC 0 C311		LO	3 17			TOTAL WRITES	80813290
0BED 0 D046		STO	DCOUT&3			MODIFIER NO. 1	80813300
0BEE 0 C314		LD	3 20			SOFT WRITE ERRORS	80813310
0BEF 0 D045		STO	OCOUT&4			MODIFIER NO. 2	80813320
0BF0 0 C315		LO	3 21			HARD WRITE ERRORS	80813330
0BF1 0 D044		STO	OCOUT&5			MODIFIER NO. 3	80813340
0BF2 1 6600	0BF6	LDX	L2 FRM4B			GET ALTERNATE RETURN	80813350
0BF4 0 6A34		STX	2 OCELS&1			PUT IN ADDRESS	80813360
0BF5 0 7021		MOX	OCLGX			BRNCH TO OUTPUT CALL	80813370
0BF6 0 C03A	FRM4B	LD	OCOUT			LINE NO. & WORD CT.	80813380
0BF7 0 83C1		A	3 -63			INCREMENT LINE NO.	80813390
0BF8 0 D038		STO	OCOUT				80813400
0BF9 0 C312		LO	3 18			TOTAL READS	80813410
0BFA 0 D039		STO	DCOUT&3			MODIFIER NO. 1	80813420
0BFB 0 C316		LO	3 22			SOFT READ ERRORS	80813430
0BFC 0 D038		STO	OCOUT&4			MODIFIER NO. 2	80813440
0BFD 0 C317		LO	3 23			HARD READ ERRORS	80813450
0BFE 0 D037		STO	OCOUT&5			MODIFIER NO. 3	80813460
0BFF 0 C3D1		LD	3 -47			GET NOP INST	80813470
0C00 0 D027		STO	DCELS			RESET TO NOP	80813480
0C01 0 D027		STO	OCELS&1			RESET TO NOP	80813490
0C02 0 7014		MDX	OCLGX			BRNCH TO OUTPUT CALL	80813500
	*						808

DATE	28FEB66	01MAY66	01JUL66	04NOV66	01OCT67	01NOV67	02DEC68	PROG ID	0808-1
EC NO.	415120	415120A	415178	415233	411875	411875A	411961	PAGE	10A


```
OC09 0 7101      MDX 1 1      ADD TO ADDR CTRL      80813620
OC0A 0 C100      LD 1 0      GET ERROR ADDR          80813630
OC08 D D0D5      STQ DCERC&4 PUT IT IN CALL RT      80813640
OC0C 0 6923      STX 1 DCELX SAVE X1                80813650
*****
OC0D 0 4480 0130 DCERC 8SI 1 ERROR MONITOR ERROR RT * SC 80813660
OC0F 1 DC31      DC DCOUT OUTPUT ADDR *          80813670
OC10 1 OC13      OC OC8SY BUSY ROUTINE ERR *      80813680
OC11 0 D000      DC 0 ERROR LOOP * PM            80813690
*****
DC12 0 700A      MDX DCEC                                80813700
*
OC13 1 6600 OC0D DC8SY LDX L2 OCERC GET BUSY RETURN ERR 80813710
OC15 D 70DC      MDX OC8ZR 8R TO SETUP RETURN          80813720
*
DC16 0 6919      OCLGX STX 1 DCELX SAVE X1            80813730
*****
OC17 0 4480 012F DCLGX 8SI 1 LOG MONITOR LOG ROUT * SC 80813740
OC19 1 DC31      DC DCOUT OUTPUT ADDR *          80813750
OC1A 1 OC20      DC DC8ZY BUSY ROUTINE LOG *      80813760
OC18 1 DC26      OC OCLR HOLD DURING OUTPUT *      80813770
*****
OC1C 0 70D7      MDX DC8ZR&2 8R TO START EXIT        80813780
OC1D 1 6600 OC26 DCEC LOX L2 DCLR                    80813790
OC1F D 70D2      MOX DC8ZR                            80813800
*
OC2D 1 660D DC17 DC8ZY LDX L2 DCLGX GET BUSY RETURN LOG 80813810
OC22 1 6E00 0808 DC8ZR STX L2 MLN BUSY RETURN SETUP    80813820
*
OC24 D 4C8D 012D 8SC 1 START ENTER MONITOR * XM      80813830
*****
DC26 1 6700 D888 DCLR LOX L3 OCT RESET X3 TO DCT ADDR SE 80813840
DC28 0 1000      DCELS SLA 0 NOP / 8R INST PM          80813850
OC29 0 100D      SLA 0 NOP / 8R ADOR WORD PM          80813860
OC2A 1 6580 OC3D LDX 11 DCELX GET SAVED X1            80813870
DC2C 0 1010      SLA 16 CLEAR ACC                    80813880
OC2D 0 00D3      STQ DCOUT CLEAR TW OPA FST WD        80813890
OC2E 0 4D00 0001 OCRMB 8SC L1 1 RETURN TO ENTRY RT SX 80813900
*
OC30 D 0000      DCELX OC 0 X1 SAVE AREA              80813910
*
*****
***** OUTPUT AREA *****
*****
OC31 D 0000      DCOUT DC 0 80 HOLD 1-7 LINE WC      80813920
OC32 0 0D0D      OC 0 80 DEC IND                      80813930
OC33 D 0000      DC D MESSAGE ID                     80813940
OC34 0 0000      DC 0 MODIFIER NO. 1                 80813950
OC35 0 0000      OC 0 2                               80813960
OC36 0 0000      DC 0 3                               80813970
OC37 0 0000      DC D 4                               80813980
OC38 0 000D      OC 0 5                               80813990
OC39 0 0D00      OC 0 6                               80814000
OC3A 0 0000      DC 0 7                               80814010
*****
***** ACCESS INOP RETRY RTNS *****
*****
OC38 0 C3EE      COUNT LD 3 -18 GET COUNT SE          80814020
OC3C 0 83FF      A 3 -1 AOD ONE                      80814030
OC3D 0 D3EE      STQ 3 -18 SAVE NEW TOTAL              80814040
OC3E D F3E8      EOR 3 -24 TEST FOR 200 RETRIES      80814050
OC3F 1 4C20 0A0E 8SC L DSKCR,Z 8R IF NOT MAX          80814060
DC41 0 10A0      SLT 32 CLR A & Q REG                 80814070
```

```
OC42 0 03EE      STQ 3 -18 RESET COUNTER          80814300
OC43 1 D400 0809 CNTND STQ L LIV CLEAR             80814310
OC45 1 DCDD 080A STD L XNR MLSCF                  80814320
OC47 0 439C      8SI 3 -1D0 8R TO MON - NO ENTRY PX 80814330
*
* MESSAGE & RETRY ROUTINE *
*
OC48 0 4381      RSTRT 8SI 3 -79 SET FNC IN MSAG SEC 80814340
OC49 0 432E      8SI 3 46 8R TO MSAG FORM 1 MC      80814350
OC4A 0 EDDA      DC /E00A -- MSAG # --              80814360
OC48 D DD0D      DC D NO ERROR LOOP ADOR            80814370
*
OC4C 0 C3EF      LD 3 -17 GET COUNT                 80814380
OC4D 0 83FF      A 3 -1 AOD ONE                     80814390
OC4E D D3EF      STQ 3 -17 SAVE NEW TOTAL            80814400
OC4F 0 F3FD      EOR 3 -16 TEST FOR 16              80814410
DC50 1 4C20 0AC1 8SC L DRERT,Z 8R IF NOT MAX        80814420
DC52 0 1DA0      SLT 32 CLR A & Q REG                80814430
OC53 0 D3EF      STQ 3 -17 RESET COUNTER            80814440
OC54 D 70EE      MDX CNTNO 8R TO ENO PGM             80814450
*
***** DISK IOCC AND CE HIST *****
*****
DC55 0 DD0D      DC D WORD COUNT                    80814460
OC56 0 DD0D      DC 0 OATA FIRST WORD                80814470
DC57 0 014D      8SS 320 REMAINING AREA              80814480
*
OCE DC /FFFF DISK HISTORY DATA                    80814490
OCE DC /FFFF DISK HISTORY DATA                    80814500
OCE DC /FFFF DISK HISTORY DATA                    80814510
OCE DC /FFFF DISK HISTORY DATA                    80814520
OCE DC /FFFF DISK HISTORY DATA                    80814530
OCE DC /FFFF DISK HISTORY DATA                    80814540
OCE DC /FFFF DISK HISTORY DATA                    80814550
OCE DC /FFFF DISK HISTORY DATA                    80814560
OCE DC /FFFF DISK HISTORY DATA                    80814570
OCE DC /FFFF DISK HISTORY DATA                    80814580
OCE DC /FFFF DISK HISTORY DATA                    80814590
OCE DC /FFFF DISK HISTORY DATA                    80814600
OCE DC /FFFF DISK HISTORY DATA                    80814610
OCE DC /FFFF DISK HISTORY DATA                    80814620
OCE DC /FFFF DISK HISTORY DATA                    80814630
OCE DC /FFFF DISK HISTORY DATA                    80814640
OCE DC /FFFF DISK HISTORY DATA                    80814650
OCE DC /FFFF DISK HISTORY DATA                    80814660
OCE DC /FFFF DISK HISTORY DATA                    80814670
OCE DC /FFFF DISK HISTORY DATA                    80814680
OCE DC /FFFF DISK HISTORY DATA                    80814690
OCE DC /FFFF DISK HISTORY DATA                    80814700
OCE DC /FFFF DISK HISTORY DATA                    80814710
OCE DC /FFFF DISK HISTORY DATA                    80814720
OCE DC /FFFF DISK HISTORY DATA                    80814730
OCE DC /FFFF DISK HISTORY DATA                    80814740
OCE DC /FFFF DISK HISTORY DATA                    80814750
OCE DC /FFFF DISK HISTORY DATA                    80814760
OCE DC /FFFF DISK HISTORY DATA                    80814770
OCE DC /FFFF DISK HISTORY DATA                    80814780
OCE DC /FFFF DISK HISTORY DATA                    80814790
OCE DC /FFFF DISK HISTORY DATA                    80814800
OCE DC /FFFF DISK HISTORY DATA                    80814810
OCE DC /FFFF DISK HISTORY DATA                    80814820
OCE DC /FFFF DISK HISTORY DATA                    80814830
OCE DC /FFFF DISK HISTORY DATA                    80814840
OCE DC /FFFF DISK HISTORY DATA                    80814850
OCE DC /FFFF DISK HISTORY DATA                    80814860
OCE DC /FFFF DISK HISTORY DATA                    80814870
OCE DC /FFFF DISK HISTORY DATA                    80814880
OCE DC /FFFF DISK HISTORY DATA                    80814890
OCE DC /FFFF DISK HISTORY DATA                    80814900
OCE DC /FFFF DISK HISTORY DATA                    80814910
OCE DC /FFFF DISK HISTORY DATA                    80814920
OCE DC /FFFF DISK HISTORY DATA                    80814930
OCE DC /FFFF DISK HISTORY DATA                    80814940
OCE DC /FFFF DISK HISTORY DATA                    80814950
OCE DC /FFFF DISK HISTORY DATA                    80814960
OCE DC /FFFF DISK HISTORY DATA                    80814970
*****
***** ** START INITIALIZATION ** *****
*****
```

```
*
* BEGIN RT F01 WR ADDR-PAT *
*
*.....*
O0B3 0 C3E5      F01AA LD 3 -27      GET WORD COUNT      SE
O0B4 0 D30D      STO 3 13      SET WORD COUNT
O0B5 0 C300      LD 3 0      CLR ACC
O0B6 1 D400 0EA4  STO L CYLEX      CLR CTR
O0B8 1 D400 0DD9  STO L CYLEC      CLR CTR
O0BA 0 C300      LD 3 0      DESIRED CYLINDER AND
O0BB 0 D30B      STO 3 11      SECTOR SET TO 000
*
*.....*
* SELECTION OF NEXT SECTOR*
*.....*
O0BC 0 4384      F01AB BSI 3 -124      BR TO CK BYPASS CYL SC
O0BD 0 43AE      F01SK BSI 3 -82      SEEK NEXT SECTOR SC
O0BE 1 4C00 0EA5  BSC L PATRT      BR TO SETUP PATTERN
O0C0 0 43AB      F01WR BSI 3 -85      WRITE SECTOR ID SC
O0C1 0 700E      MDX F01AE      ERROR RETURN ADDRESS
*
*.....*
* IF ID IS OK, GEN NEW
* SECTOR ADDRESS AND
* CONTINUE TEST
*.....*
O0C2 0 43A8      F01RD BSI 3 -88      BR TO RD RT SC
O0C3 0 7010      MDX F01AF      RD ERR RETURN
*
*.....*
O0C4 1 7401 0B93  F01AC MDX L DCT&11,1 INCREMENT SECTOR ADR
O0C6 0 C38E      LD 3 -66      GET DISK MAX CTRL
O0C7 0 F30B      EOR 3 11      TEST CURRENT ADDR
O0C8 0 4820      BSC Z      BR OUT IF ZERO
O0C9 0 70F2      MDX F01AB      CONTINUE TEST
*
*.....*
O0CA 0 C3D1      LD 3 -47      GET NOP INST
O0CB 1 D400 091A  STO L DCWR      SET BR/NOP SW TO NOP
O0CD 1 D400 0936  STO L DCRD      SET BR/NOP SW TO NDP
*
*.....*
O0CF 0 439F      BSI 3 -97      BR TO DCRTN SC
*
*.....*
* ERR ANALYSIS & LOGGING
*.....*
O0D0 0 4334      F01AE BSI 3 52      BR TO MSAG FORM 2 MC
O0D1 0 E060      DC /E060      -- MSAG # --
O0D2 1 0DC0      DC F01WR      ERROR LOOP RE-WRITE
O0D3 0 70EE      MDX F01RD      BR TO RD CK
*
*.....*
O0D4 0 4334      F01AF BSI 3 52      BR TO MSAG FORM 2 MC
O0D5 0 E061      DC /E061      -- MSAG # --
O0D6 1 0DC2      DC F01RD      ERR LOOP ADDR
O0D7 0 4002      BSI CETRT      BR TO CYL ERR TBL RT SC
O0D8 0 70EB      MDX F01AC      BR TO CONTINUE
*
*.....*
* ERROR CONTROL ROUTINE
*.....*
O0D9 0 0000      CYLEC DC 0      CYL ERR CTR
*
*.....*
O0DA 0 0000      CETRT DC 0      SAVE ENTRY
O0DB 0 C0FD      LD CYLEC      TEST
O0DC 0 F3FD      EOR 3 -3      FOR
O0DD 1 4C18 0DF9  BSC L DSKNG,&- MAX ERR TEST
O0DF 1 7401 0DD9  MDX L CYLEC,1 CNT
*
```

```
O0E1 1 C400 0EA4  CKCET LD L CYLEX      GET ERR CNT      80815660
O0E3 0 4820      BSC Z      SKIP IF ZERO      80815670
O0E4 0 7002      MDX *E2      BR TO SET ERR CTRL      80815680
O0E5 0 6100      LDX 1 0      SET CNT TO ZERO      80815690
O0E6 0 7002      MDX *E2      BR TO SETUP RT      80815700
O0E7 1 6580 0EA4  LDX 11 CYLEX      SET IN ERR CTRL CNT      80815710
*
*.....*
O0E9 0 6208      SETUP LDX 2 8      SET X3 CTRL TD 8      80815720
O0EA 0 C30B      LD 3 11      GET INITIAL ADDR      80815730
O0EB 0 1803      SRA 3      CLR HD/SECT      80815740
O0EC 0 1003      SLA 3      CLR HD/SECT      80815750
O0ED 1 D500 0EB8  CSADR STO L1 CYLET      PUT SECT ADDR IN CET      80815760
O0EF 0 7101      MDX 1 1      ADV CYL ERR TBL CTRL      80815770
O0F0 0 83FF      A 3 -1      ADV SECT ADDR      80815780
O0F1 0 72FF      MDX 2 -1      DEC ADDR C-S CTRL      80815790
O0F2 0 70FA      MDX CSADR      BR TO LOOP      80815800
O0F3 0 93FF      S 3 -1      RE-ADJ ADDR CTRLS      80815810
O0F4 0 D30B      STO 3 11      SET IN PROPER ADDR      80815820
O0F5 1 7408 0EA4  MDX L CYLEX,B      INCREMENT ERR CNTR      80815830
O0F7 1 4C80 0DDA  BSC I CETRT      RETURN TO CALL RT SX      80815840
*
*.....*
* SET BAD PACK ERR SWITCH
*.....*
O0F9 0 C3D1      DSKNG LD 3 -47      GET NOP INST SE
O0FA 1 D400 0E63  STO L DNGSW      SET BR INST TD NOP
O0FC 0 70E4      MDX CKCET      BR TO SETUP SX
*
*.....*
* CE DATA ERR ROUT
*.....*
O0FD 0 0000      CETYP DC 0      SAVE ENTRY
O0FE 0 4334      BSI 3 52      BR TO MSAG FORM 2 MC
O0FF 0 E0CE      DC /E0CE      -- MSAG # --
O000 0 0000      DC 0      NO ERR LOOP ADDR
O001 1 4C80 0DFD  BSC I CETYP      RETURN TO MAIN LINE
*
*.....*
O003 0 40F9      CESX3 BSI CETYP      BR TO TYPE ERR MSAG
O004 0 705E      MDX DNGSW      BR TO CONTINUE
*
*.....*
O005 0 40F7      CESX7 BSI CETYP      BR TO TYPE ERR MSAG
O006 0 7048      MDX CEXA7      BR TO CONTINUE
*
*.....*
* BEGIN ROUTINE 2
*.....*
O007 0 C3FF      F02AA LD 3 -1      SET WORD COUNT FOR TE
O008 0 D30D      STO 3 13      READ TO 001
O009 0 C3CF      LD 3 -49      DESIRED CYLINDER ADR
O00A 0 D30B      STO 3 11      SECTOR SET TO 000
O00B 0 6500 05B0  LDX L1 1456      NUMBER OF SECTORS
*
*.....*
* SELECTION OF NEXT SECTOR*
*.....*
O00D 0 6923      F02AB STX 1 F02XB      SAVE X1 XTANT
O00E 0 4384      BSI 3 -124      DCABP RT SC
O00F 0 43AE      F02SK BSI 3 -82      DCSK RT SC
O010 0 43AB      BSI 3 -88      DCRD RT SC
O011 0 7008      MDX F02AD      ERROR RETURN ADDRESS
*
*.....*
* IF ID IS OK, GEN NEW
* SECTOR ADDRESS AND
* CONTINUE TEST
*.....*
```

```
*
*.....*
OE12 1 74FF 0B93  F02AC MDX L DCT&11,-1 DECREMENT SECTDR AOR
OE14 0 1000      NDP 0 SAFTY NDP
OE15 1 6580 0E31  LDX 11 F02XB GET X1 XTANT
OE17 0 71FF      MOX 1 -1 DECREMENT XR1 BY 1
OE18 0 70F4      MOX F02AB CONTINUE TEST
OE19 0 439F      BSI 3 -97 OCRTN RT
*
*.....*
```

ERR ANALYSIS & LOGGING

```
*
*.....*
OE1A 0 C30B  F02AD LD 3 11 GET DESIRED AADR
OE1B 0 F30C  EOR 3 12 CMP WITH ACTUAL
OE1C 0 1803  SRA 3 CLR SECTDR/HEAD
OE1D 1 4C20 0E25 BSC L F02AE,Z BR IF CYL NDT EQ
*
OE1F 0 C30B  LD 3 11 GET DESIRED AADR
OE20 0 F30C  EDR 3 12 CMP WITH ACTUAL
OE21 0 100C  SLA 12 CLR CYLINDER AADR
OE22 1 4C20 0E29 BSC L F02AF,Z BR IF SECT/HO NDT EQ
OE24 0 70ED  MDX F02AC FALSE ERR CONTINUE
*
OE25 0 4386  F02AE BSI 3 -122 DRESK RT SC
OE26 0 43A8  BSI 3 -88 OCRD RT SC
OE27 0 7005  MDX F02AG ERR RO RETURN
OE28 0 43A2  BSI 3 -94 RESTART EXIT SX
*
OE29 0 4334  F02AF BSI 3 52 BR TD MSAG FORM 2 MC
OE2A 0 E020  DC /E020 -- MSAG # --
OE2B 1 E0F  DC F02SK LDOP ON ERR
OE2C 0 43A2  BSI 3 -94 RESTART EXIT SX
*
OE20 0 4334  F02AG BSI 3 52 BR TD MSAG FORM 2 MC
OE2E 0 E021  DC /E021 -- MSAG # --
OE2F 0 0000  DC 0 NO ERR LDOP AADR
OE30 0 43A2  BSI 3 -94 RESTART EXIT SX
*
OE31 0 0000  F02XB OC 0 X1 XTANT HOLDER
*
*.....*
```

ROUTINE 3 WR CE SECTDRS

```
*
*.....*
OE32 0 4388  F03AA BSI 3 -120 RDY NBSY RT SEC
OE33 0 4380  F03AB BSI 3 -128 OCARM RT SC
*
OE34 0 C3D8  F03AC LD 3 -40 GET DISK AADR
OE35 0 030B  STO 3 11 SET AADR
OE36 0 C3E5  LD 3 -27 GET WC
OE37 0 D30D  STO 3 13 SET WC
OE38 0 43AE  BSI 3 -82 SEEK CYL SC
*
*.....*
CE SECT 7 SETUP
*
OE39 0 C3D0  LD 3 -48 GET 1313 PATTERN
OE3A 0 438C  BSI 3 -116 OFILL RT SC
OE3B 1 C400 0EA4 LD L CYLEX GET ERR AMT
OE3D 1 4C18 0E41 BSC L F03XY,&- BR ND ERR CNT
OE3F 1 4400 0E99 BSI L F10AX BR TD SET ERR IN IOA
*
OE41 0 C3F9  F03XY LD 3 -7 GET SECTDR AADR
OE42 0 EB08  OR 3 -40 DR IN AADR DF CYL
OE43 0 D30B  STD 3 11 SET IN SECT-CYL AADR
*
```

80816340
80816350
80816360
80816370
80816380
80816390
80816400
80816410
80816420
80816430
80816440
80816450
80816460
80816470
80816480
80816490
80816500
80816510
80816520
80816530
80816540
80816550
80816560
80816570
80816580
80816590
80816600
80816610
80816620
80816630
80816640
80816650
80816660
80816670
80816680
80816690
80816700
80816710
80816720
80816730
80816740
80816750
80816760
80816770
80816780
80816790
80816800
80816810
80816820
80816830
80816840
80816850
80816860
80816870
80816880
80816890
80816900
80816910
80816920
80816930
80816940
80816950
80816960
80816970
80816980
80816990
80817000
80817010

```
OE44 0 C3C7  LO 3 -57 GET CE IO -- CEDC--
OE45 1 0400 0C57 STO L DCOA&2 SET IN IOA
*
OE47 1 C400 0EA4 LO L CYLEX GET ERR AMT
OE49 1 0400 0C58 STD L OCOA&3 SET IN IOA
*
OE4B 0 C3E5  LO 3 -27 GET WC
OE4C 0 030D  STO 3 13 PUT IN OCT TBL
*
OE4D 0 43AB  BSI 3 -85 WR CE SECT SEVEN SC
OE4E 0 70B6  MDX CESX7 BR TD ERR ROUT
*
*.....*
```

CE SECT 3 SETUP

```
*
*.....*
OE4F 0 C3C6  CEXA7 LD 3 -58 GET PATTERN
OE50 0 438C  BSI 3 -116 FILL IOA WITH SAME SC
OE51 1 C400 0EA4 LD L CYLEX GET ERR AMT
OE53 1 4C18 0E57 BSC L F03XZ,&- BR NO ERR CNT
OE55 1 4400 0E99 BSI L F10AX BR TD SET ERR IN IOA
*
OE57 0 C3FD  F03XZ LD 3 -3 GET AADR
OE58 0 EB08  OR 3 -40 OR IN AADR OF CYL
OE59 0 D30B  STO 3 11 PUT IT IN OCT
*
OE5A 0 C3C7  LO 3 -57 GET CE ID -- CEDC --
OE5B 1 D400 0C57 STO L OCOA&2 PUT IO IN IOA
*
OE5D 1 C400 0EA4 LD L CYLEX GET ERR AMT
OE5F 1 D400 0C58 STD L DCOA&3 PUT WC IN IOA
*
OE61 0 43AB  BSI 3 -85 WRITE CE SECT THREE SC
OE62 0 70A0  MDX CESX3 BR TD ERR ROUT
*
OE63 0 7003  ONGSW MOX ETEST BR TD TEST ERR CNT
OE64 0 4328  BSI 3 40 BR TD MSAG FORM 0 MC
OE65 0 E066  DC /E066 -- MSAG # --
OE66 0 0000  OC 0 ND ERR LDOP AADR
*
*.....*
```

CE ERR TBL TEST RT

```
*
*.....*
OE67 0 C03C  ETEST LD CYLEX GET ERR CNT SE
OE68 1 4C18 0E97 BSC L DIPND,&- BR IF ZERD ERR CNT
*
OE6A 0 C3F8  WRCET LD 3 -8 GET WORD COUNT
OE6B 1 0400 0C31 STO L OCDUT CLEAR LINE CTRL
OE60 0 6500 CBAD LOX L1 /CBAO BAO CYL ERR MSAG NUM
OE6F 1 6D00 0C33 STX L1 OCDUT&2 SET ERR MSAG NUM OPA
*
OE71 0 C032  LD CYLEX GET TBL ERR CNT
OE72 0 0025  STD ETCNT SET IT IN CTRL WD
*
OE73 0 6200  LDX 2 0 SET X2 CNT CTRL
OE74 0 6100  LDX 1 0 SET X1 CNT CTRL
OE75 0 C3F8  LD 3 -8 GET CNT CTRL
OE76 0 1890  WRCPL SRT 16 SHIFT IT TO EXT
*
OE77 1 C600 0EB8 LD L2 CYLET GET ERR AADR
OE79 1 D500 0C34 STO L1 OCDUT&3 SET IT IN OPA
OE7B 0 7101  MOX 1 1 ADV CTRL X1
OE7C 0 7201  MOX 2 1 ADV CTRL X2
*
OE70 0 1090  SLT 16 SHIFT FOR CNT
OE7E 0 93FF  S 3 -1 DEC CTRL
OE7F 0 4820  BSC Z SKIP IF ZERD
OE80 0 70F5  MDX WRCPL BR LDOP
*
*.....*
```

```
*
*.....*
*          PRINT CYL ERR T8L DATA
*.....*
*****
OE81 0 4480 012F  PRTBL 8SI  I  LOG      CALL MON LOG RT  * SC
OE83 1 0C31      DC      DCOUT    OPA                *
OE84 1 0E87      DC      LSTRT    BUSY RT             *
OE85 1 0E8D      DC      LHOLD     HOLD CTRL          *
*****
OE86 0 7004      MDX      LSTRT&4  PROCEED
*
OE87 1 6700 OE81  LSTRT LDX  L3 PRTBL  GET MLN ENTRY
OE89 1 6F00 080B  STX   L3 MLN    SET IT IN MLSCF
*
OE88 0 4C80 012D  BSC   I  START   GO TO MONITOR
*
OE8D 1 6700 0888  LHOLD LDX  L3 DCT   SET X3 CTRL ADDR
OE8F 0 C008      LD      ETCNT   GET CNT FLD
OE90 0 93F8      S       3 -8    DEC LOOP CNT
OE91 0 D006      STO      ETCNT   SAVE NEW TOTAL
OE92 1 4C20 OE74  8SC   L  WRCPL-2,Z TEST IT - NOP IF ZRO
*
OE94 0 1010      SLA      16      CLR ACC
OE95 1 D400 0C31  STO   L  DCOUT   CLR OPA
*
OE97 0 439F      DIPND BSI  3 -97   8R RETURN          SX
*
OE98 0 0000      ETCNT DC      0
*
*
*
*
OE99 0 0000      FIOAX DC      0      SET IN RETURN ADDR  SE
OE9A 1 6580 OEA4  LDX   I1 CYLEX   SET ERR CNT IN X1
OE9C 1 C500 OE87  FIOAY LD   L1 CYLET-1 GET FIRSTADDR
OE9E 1 D500 0C58  STO   L1 DCDA&3  PUT IT IN IOA
OEAO 0 71FF      MDX    1 -1      DEC INDEX CTRL
OEAI 0 70FA      MDX      FIOAY    BR LOOP
OEAZ 1 4C80 OE99  FIOAZ BSC  I  FIOAX  RETURN TO MAINLINE  SX
OEAA 0 0000      CYLEX DC      0      SECT ERR CNT
*
*          END OF WR CE TEST DATA
*
*.....*
*          ALTERNATE PATTERN RT
*.....*
*
*
OEAS 0 C308      PATRT LD   3 11      GET ADDR          SE
OEAA 0 100D      SLA      13      813 TO 80
OEAT 1 4C28 OE84  8SC   L  TST10,Z&  BR IF HEAD 1
*
OEAG 0 C308      TST00 LD   3 11      GET ADDR
OEAA 0 4804      BSC      E          SKIP IF ADDR EVEN
OEAB 0 7004      MDX      PATE5     8R TO SET E5E5 PAT
*
OEAC 0 C30D      PAT13 LD   3 -48     GET PATTERN 1313
OEAD 0 438C      8SI      3 -116     8R TO FILL IOA      SC
OEAE 1 4C00 ODC0  8SC   L  F01WR    8R TO WRITE RT      SX
*
OEB0 0 C3C6      PATE5 LD   3 -58     GET PATTERN E5E5
```

```
OEB1 0 438C      8SI      3 -116     8R TO FILL IOA      SC 80818380
OEB2 1 4C00 ODC0  8SC   L  F01WR    8R TO WRITE RT      SX 80818390
*          *          *          *          *          * 80818400
OEB4 0 C308      TST10 LD   3 11      GET ADDR          80818410
OEB5 0 4804      8SC      E          SKIP IF ADDR EVEN  80818420
OEB6 0 70F5      MOX      PAT13     8R TO SETUP PAT E5   80818430
OEB7 0 70F8      MDX      PATE5     8R TO SETUP PAT 13   80818440
*          *          *          *          *          * 80818450
OEB8 0 0140      CYLET 8SS  E 320     CYLINDER ERR ACCUM 80818460
*          *          *          *          *          * 80818470
***** 80818480
***** 80818490
*          *          *          *          *          * 80818500
*          *          *          *          *          * 80818510
*          *          *          *          *          * 80818520
*          *          *          *          *          * 80818530
*          *          *          *          *          * 80818540
***** 80818550
***** 80818560
*          *          *          *          *          * 80818570
*          *          *          *          *          * 80818580
OFF8 0 000F      OMEGA DC      /000F
OFFA 081E      END      EXEQD      8R TO 8EGIN XFER RT 80818590
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY
```

ABP 0B0C 0AB6
ADSKC 0A82 09F3 0A85 0A87 0A89 0A8B 0A89
ARM 0B08 0A9C
BEGIN 012C 081E
CUTBC 0995 09D0
CDTGX 09DA 09BC 09D9
CUTLK 09C9 09ED
CDTNR 09B1 0B3F
CDTRC 09A2 09A9 0A05
CDTRT 0992 0925 0945 09B6 09D8 0A04
CUTSE 09AD 09A4
CDTSN 09B8 0929 0949 09DA 09DC
CESX3 0E03 0E62
CESX7 0E05 0E4E
CETRT 0DDA 0DD7 0DF7
CETYP 0DFD 0E01 0E03 0E05
CEXA7 0E4F 0E06
CHNBZ 0A44 0AE1
CHNRA 0AF3 0834
CHNRL 0AF1 0B17
CHNRQ 0ADF 0A44 0B13
CHNSA 0AE2 0832
CKCET 0DE1 0DFC
CNTND 0C43 0C54
COUNT 0C3B 0B22
CSADR 0DED 0DF2
CYLEC 0DD9 0DB8 0DD8 0DDF
CYLET 0EB8 08F8 0DED 0E77 0E9C
CYLEX 0EA4 08F2 08F6 0DB6 0DE1 0DE7 0DF5 0E3B 0E47 0E51 0E5D 0E67 0E71 0E9A
DARMC 0A97 0A6B
DARMZ 0A9C 0A6F 0A95
DCABP 0AAE 0B0D
DCARM 0A8B 0A9A 0B09
DCBPR 0AB6 0A80 0AB0
DCBSY 0C13 0C10
DCBZR 0C22 0C15 0C1C 0C1F
DCBZY 0C20 0C1A
DCDA 0C55 0887 0891 0923 0943 0948 0997 09BE 09E6 0AEB 0B89 0E45 0E49 0E5B
0E5F 0E9E
DCDLA 0AF9 0B19
DCDSW 0B03 0B1B
DCE 0D97
DCEC 0C10 0C12
DCELS 0C28 0BDE 0BE7 0BF4 0C00 0C01
DCELX 0C30 0C0C 0C16 0C2A
DCEOD 08BC 087C 0B2E
DCERC 0C0D 0C0B 0C13
DCFMA 0BC3 0B07
DCFMB 0BC9 0B8B
DCLGC 0C16 0C07
DCLGX 0C17 0BF5 0C02 0C20
DCLR 0C26 0C1B 0C1D
DCOSW 0C03 0BB5 0BCB 0BE8
DCOUT 0C31 0BB4 0BBA 0BC0 0BC2 0BC4 0BC6 0BC8 0BCA 0BD0 0BD2 0BD4 0BD6 0BDC
0BE0 0BE2 0BE4 0BE9 0BEB 0BED 0BEF 0BF1 0BF6 0BF8 0BFA 0BFC 0BFE
0C04 0C0F 0C19 0C2D 0E6B 0E6F 0E79 0E83 0E95
DCRBB 0990
DCRD 0936 095A 0963 0B31 0DCD
DCRDY 0AD6 0ADE 0B11
DCREL 098A 094A 0960
DCRE1 097B 0954 096C
DCRE2 097C 0955 0974
DCRGA 097D 094F
DCRHM 08AD 08AA
DCRMB 0C2E
DCRND 08BE 08C0
DCRDK 0985 097E
DCRTN 08A7 090C 0B28

DCR10 0938 0936
DCR12 093C 0972
DCR16 0945 0940
DCR19 095D 0964
DCR20 0961 0956
DCR21 0965 0952
DCR22 096D 097A
DCR23 0973 0969
DCSK 09EE 0A27 0B37
DCT 0B88 0822 084D 0854 085B 085F 086D 086F 08B5 08C1 08DF 0926 0946 0958
095D 0961 0965 0976 0983 09B1 09C9 09D2 0A06 0A60 0A64 0AC8 0AE5
0AF5 0AFF 0C26 0DC4 0E12 0E8D
DCTL1 085B 085E
DCTL2 085F 0B3D
DCTL3 0869 0894 0898 08B3
DCTL4 086F 087B 08D3
DCTL5 0879 086B 08AF
DCTRL 0859 082B 0B3C
DCWBB 0934
DCWEL 092E 092B
DCWR 091A 0B34 0DCB
DCW10 091F 091A
DDSA 087D 0873 0877
DEND 0B2D
DEPA 0853 0808 0857
DEXEQ 0A9E 0B0B
DEXID 0AAC 0AA7 0AA8
DFILL 0AE9 0AEE 0B15
DHMLE 0A5C 0A71
DHMNR 0A64 0A5E
DHOME 0A56 0A8D
DIPA 0821 0806 084A
DIPND 0E97 0E68
DLA 0B18 0B01
DLABB 0AFF 0B48
DLAND 08DB 08D5
DLNRT 08C1 08D7 0B41
DLNR1 08D4 08C8
DLPA 084C 0807 0851
DMLCK 0880 0867 08A1 08A5
DMLE1 089F 0886
DMLE2 08A3 0890
DMLIC 0896 088A 089D 08A2 08A6
DMLXT 089E 0889
DNGSW 0E63 0DFA 0E04
DRASK 0A72 0ABB
DRD 0B30 0985 0990
DRERT 0AC1 0C50
DRESK 0AB8 0B0F
DRSKR 0AC8 0B3E
DRSKX 0AD2 0A75
DSK 0B36 0A10
DSKA0 0816 0842
DSKA1 0817
DSKA2 0818 0844
DSKA3 0819
DSKA4 081A 0846
DSKA5 081B
DSKA6 081C 0848
DSKA7 081D
DSKBB 0A10 09F9 0A19 0A30
DSKBT 0A1A 0A13
DSKCR 0A0E 0C3F
DSKEE 0A01 0A3B
DSKER 0A12 0A0C
DSKIA 0A1F 09F1
DSKIS 0A24 0A1D
DSKNG 0DF9 0DDD

```
DSKNR 0A06 0840
DSK13 0A2A 09F5
DSPLA 09DE 09CB
DSPLP 09E1 09EA
DSPX1 09EB 09DE 09E5
DSW 081A 0805
DVA 08DD 0837 0AE3
DWR 0833 092C 0934
D13HM 0A3A 0A32
D13MR 0A37 0A43
EDTA1 0B13 0B30
EDTA2 0814 082D
EDTA3 0815 082A
EMF 0839 0A4A 0A4C 0A50 0A52 0A54
EMNRT 0A4A 083A
END 012E 0B1F
EPA 0B0B
ERROR 0130 0C0D
ETCNT 0E98 0E72 0E8F 0E91
ETEST 0E67 0E63
EXEQD 081E 0FFA
EXQ 080A 0AA9
FIOAX 0E99 0E3F 0E55 0EA2
FIOAY 0E9C 0EA1
FIOAZ 0EA2
FLX 0B14 0AEF
FORM0 08B0 09B3 0881
FORM1 08B6 0887
FORM2 088C 0958 0961 0965 088D
FORM3 08CC 08CD
FORM4 08DB 08D9
FRM4A 08E9 08E5
FRM4B 08F6 08F2
F01AA 0DB3 087D
F01AB 0D8C 0DC9
F01AC 0DC4 0DD8
F01AE 0DD0 0DC1
F01AF 0DD4 0DC3
F01RD 0DC2 0DD3 0DD6
F01SK 0DBD
F01WR 0DC0 0DD2 0EAE 0E82
F02AA 0E07 0B7E
F02A8 0E0D 0E1B
F02AC 0E12 0914 0E24
F02AD 0E1A 0E11
F02AE 0E25 0E1D
F02AF 0E29 0E22
F02AG 0E2D 0E27
F02SK 0E0F 0E2B
F02XB 0E31 0911 0E0D 0E15
F03AA 0E32 087F
F03A8 0E33
F03AC 0E34
F03XY 0E41 0E3D
F03XZ 0E57 0E53
HALT 0133
HNG 081C
IPA 0806
LHOLD 0E8D 0E85
LIV 0809 08D9 08EC 0AA0 0C43
LOG 012F 0C17 0E81
LPA 0B07
LSTRT 0EB7 0E84 0EB6
MEND 0B1E
MLN 0B0B 0841 0B50 08E4 0A46 0AFC 0C22 0EB9
NTRER 0BFO 08E6 0BFO 7001
NTRPT 0BDE 0BEE
NTRST 0BEB
```

```
NTRXT 08EE
OMEGA 0FF8 080D
PATE5 0E80 0EAB 0EB7
PATRT 0EA5 0D8E
PAT13 0EAC 0EB6
PEND 080D
PID 07FF 0820
PRTBL 0E81 0E87
RAD 0B01 0B75
RDY 0B10 0AD8
REL 0B16 0AF7
RELDV 0132 0AF1
REQ 0B12 0AE7
REQDV 0131 0ADF
REST 082A
RID 0800 0B71
RSK 0B0E 0AD4
RSTRT 0C4B 0ACE
RTN 0B27
RWACK 08F1 08FF 0918 0937
RWCKA 08FB 08FE
RWCKT 0901 08FB
RWCKX 08FF 0BF4
RWRT3 0916 0907
SETUP 0DE9
SKADJ 0A77 0A85
SKOUT 0A7E 0A7A 0A7D
START 012D 08D8 0A48 0825 0C24 0EBB
STRT 0824
SW0 0802
SW1 0B03 0869 0BAD
SW2 0B04 0824
SW3 0B05 0896 08A7 09C5 09E1
TERM 0B0C 0AE4 0AF4
TST00 0EA9
TST10 0EB4 0EA7
UNTA1 0830 0825 0B2C 082F
UNTA2 082D 0B2B
UNTA3 082A
WAIT1 089C 3001
WAIT2 08BF 3002
WRCET 0E6A
WRCPL 0E76 0E80 0E92
XNR 080A 0C45
END OF ASSEMBLY
```

----- LAST PAGE -----

TABLE OF CONTENTS	
1. PURPOSE . . . . .	.1A
2. PREREQUISITES . . . . .	.1A
3. USE PROCEDURE . . . . .	.1A
3.1 PROGRAM LOADING	
3.2 PROGRAM OPERATION	
3.3 PROGRAM HALTS	
3.4 PROGRAM TERMINATION	
3.5 PROGRAM RESTART	
4. PRINTOUTS . . . . .	.3A
4.1 STATUS MESSAGES	
4.2 COMMAND MESSAGES	
4.3 DATA MESSAGES	
4.4 ERROR MESSAGES	
5. COMMENTS . . . . .	.7A
5.1 DESCRIPTION OF TEST ROUTINES	
5.2 DESCRIPTION OF SUB-ROUTINES	
6. APPENDIX . . . . .	.11
6.1 EDIT PROCEDURE	

1. PURPOSE
- THE 1810A/B (13SD/44SD) FUNCTION TEST IS DESIGNED TO TEST EACH FUNCTION OF THE DISK FOR COMPLIANCE WITH THE PRODUCT SPECIFICATIONS.
- THIS TEST IS WRITTEN TO ACCOMMODATE SYSTEMS WITH ONE OR MORE 13SD (1810A) OR 44SD (1810B) DISK DRIVES. THIS PROGRAM IS DESIGNED TO RUN ANY ONE OF THREE DISK DRIVES WHICH MAY BE ON THE SYSTEM.
- SEE SECTION 3.2 (PATCH OPTIONS) FOR INFORMATION ON RUNNING MULTIPLE DRIVES, IN OVERLAP MODE.
2. PREREQUISITES
- 13SD (1810A) OR 44SD (1810B) DISK DRIVES. THIS PROGRAM IS DESIGNED TO RUN ANY ONE OF THREE DISK DRIVES WHICH MAY BE ON THE SYSTEM.
- THIS PROGRAM REQUIRES THAT A PREVIOUSLY INITIALIZED DISK PACK BE INSTALLED ON THE DISK DRIVE TO BE TESTED AND THE DISK DRIVE BE MADE READY. ANY DISK PACK WHICH HAS BEEN PROPERLY INITIALIZED BY THE 2315 DIAGNOSTIC DISK INITIALIZATION PROGRAM MAY BE USED FOR THIS TEST.
3. USE PROCEDURE
- 3.1 PROGRAM LOADING
- PLACE THE INITIALIZED DISK PACK IN THE 1810 TO BE TESTED AND FOLLOW THE STEPS BELOW.
1. DEPRESS START BUTTON.
 2. WAIT FOR THE MACHINE TO BECOME READY PRIOR TO EXECUTING THIS PROGRAM.
- TO LOAD THE PROGRAM DECK, USE THE STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.
- 3.2 PROGRAM OPERATION
- STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE OM USE PROCEDURE FOR DETAILS OF PARTS 1-4 BELOW.
1. CLEAR STORAGE TO 7OFF.
 2. LOAD DIAGNOSTIC MONITOR
 3. SELECT MODE OF EXECUTION
 4. SELECT MONITOR CONTROL OPTIONS
 5. SELECT PROGRAM OPTIONS FROM.
- TABLE 0 - PROGRAM CONTROL FUNCTION
TABLE 1 - ROUTINE SELECT FUNCTION
TABLE 2 - DEVICE SELECT FUNCTION
PATCH - RANDOM PATTERN SELECTION AND MULTIPLE DRIVE OVERLAP
6. SET CHECK STOP SWITCH TO 'OFF' AND WRITE STORAGE PROTECT SWITCH TO 'YES'.
 7. INSTRUCT MONITOR TO EXECUTE THIS PROGRAM.

TABLE D - PROGRAM CONTROL FUNCTION (PROGRAM OPTIONS)

```

*****
* SENSE/PROGRAM *
* D 1 2 3 4 5 6 7 *
* * *
* D 0 0 0 1 0 0 1 *
* * *
1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1
   (AS SHOWN).
2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7
   (AS SHOWN).
3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
4. PRESS CONSOLE INTERRUPT.
*****
* DATA ENTRY SWITCHES *DESCRIPTION*
* D 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* *
* . . . 1.....TERMINATE PROGRAM
* *
* . . . 1.....BYPASS ALL PRINTOUTS EXCEPT ERROR
* *
* . . . MESSAGES INOTE..ERROR MESSAGES MAY
* *
* . . . BE BYPASSED BY DM OPTION)
* *
* . . . 1.....LOCK ON ERROR-IF THIS SWITCH IS ON
* *
* . ANY ERROR WILL CAUSE THE PROGRAM
* *
* . TO LOOP IN THAT SECTION UNTIL THIS
* *
* . SWITCH IS CLEARED
* *
* 1.....REQUEST ROUTINES TO PRINT ALL
* *
* ERRORS (ROUTINES NORMALLY
* *
* PRINT ONLY FIRST ERROR)
*****

```

TABLE 1 - ROUTINE SELECTION

1. THESE SWITCHES CAN BE CHANGED AT ANY TIME.
2. IF ZERO IS ENTERED, THE PROGRAM WILL NOT LOOP BUT WILL RUN ALL ROUTINES

```

*****
* SENSE/PROGRAM * 1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES D AND I
* D 1 2 3 4 5 6 7 * IAS SHOWN).
* 2. SET PID IN SENSE/ PROGRAM SWITCHES 2-7.
* D 1 D 0 1 D 0 1 * (AS SHOWN)
* 3. SET DESIRED ROUTINE NUMBER (IN HEX) IN DATA ENTRY SW5.
* 4. PRESS CONSOLE INTERRUPT.
* 5. TO SELECT A STARTING ROUTINE
* A. ENTER STARTING ROUTINE NUMBER IIN HEX)
* B. START PROGRAM RUNNING
* C. ENTER ROUTINE NUMBER 0
*****
* DATA ENTRY SWITCHES * *DESCRIPTION
* D 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *
* X X X X * ENTER DESIRED ROUTINE NUMBER
* IN HEXADECEMAL. ROUTINE NUMBERS
* 0-E HEX ARE LEGAL ENTRIES.
* NOTE- ENTRY OF AN ILLEGAL ROUTINE
* WILL CAUSE PROGRAM TERMINATION
*****

```

TABLE 2 - DEVICE SELECTION

```

*****
* SET FUNCTION 1D IN SENSE/PROGRAM SWITCHES D AND 1
* SENSE/PROGRAM * (AS SHOWN).
* 2. SET 21D IN SENSE/PROGRAM SWITCHES 2-7.
* D 1 2 3 4 5 6 7 * (AS SHOWN)
* * 3. SELECT DESIRED DEVICE
* 1 D 0 D 1 D D 1 * 4. PRESS CONSOLE INTRUPT
*****
* DATA ENTRY SWITCHES * DESCRIPTION
* D 1 2 3 4 5 6 7 8 9 1D 11 12 13 14 15 *
* D D D . . . . . . . . . . . . . . . . *
* 1 0 D . . . . . . . . . . . . . . . . * RUN THE DISK DRIVE ASSOCIATED WITH
* * THE FIRST DDEF ON THE EDIT CARD
* 0 0 . . . . . . . . . . . . . . . . * RUN THE DISK DRIVE ASSOCIATED WITH
* * THE SECOND DDEF ON THE EDIT CARD.
* D 0 1 . . . . . . . . . . . . . . . . * RUN THE DISK DRIVE ASSOCIATED WITH
* * THE THIRD DDEF ON THE EDIT CARD.
* CAUTION. ANY BIT ON IN THIS FUNCTION OTHER THAN BITS 1 OR 2 WILL SELECT THE
* DISK DRIVE ASSOCIATED WITH THE FIRST DDEF.
*****

```

PATCH OPTIONS

THERE ARE SIX PATCH OPTIONS AVAILABLE WITH THIS PROGRAM. TO USE ONE OR ALL OF THESE OPTIONS MAKE UP PATCH CARDS AS SHOWN BELOW AND INSERT INTO THE DECK BEFORE THE BINARY END CARD. PUNCH THE CARDS STARTING IN COLUMN ONE AS SHOWN. VALUES TO BE PATCHED IN SHOULD BE TAKEN FROM A SUMMARY TABLE PRINTOUT.

NOTE- THESE OPTIONS MAY BE INSERTED, AFTER PROGRAM LOAD, THRU THE CONSOLE SWITCHES BUT GREAT CARE MUST BE TAKEN TO COMPUTE CORRECTED PATCH ADDRESSES USING NECESSARY RELOCATION FACTORS.

THESE TWO OPTIONS MAY BE USED IN THE CASE OF A DISK WHICH IS FAILING ON SOME SET PATTERN. THE BEGINNING NUMBER DESIRED MAY BE DETERMINED BY EITHER ERROR PRINTOUTS OBTAINED OR FROM THE SUMMARY PRINTOUT.

1. SELECTION OF FIRST RANDOM NUMBER TO BE USED BY THE RANDOM SEEK ROUTINE (4). THIS NUMBER WILL BE USED AS THE FIRST RANDOM NUMBER ON EVERY ROUTINE PASS. TO SELECT THIS OPTION, PUNCH THE PATCH CARD STARTING IN COLUMN ONE AS SHOWN.

XXXX= HEXADECEMAL NUMBER WHICH IS USED TO DETERMINE THE FIRST SEEK.

NOTE- A FULL FOUR DIGITS ARE ENTERED TO ALLOW PROPER RANDOM GENERATION BUT ONLY THE LEFT TWO DIGITS ARE USED BY THE SEEK ROUTINE.

2. SELECTION OF FIRST RANDOM NUMBER TO BE USED BY THE TWO RANDOM PATTERN WRITE-READ ROUTINES (9 AND 10). THIS NUMBER WILL BE USED AS THE FIRST RANDOM NUMBER ON EVERY ROUTINE PASS.

*DB1E8XXX (8 = BLANK)
XXXX = HEXADECIMAL NUMBER WHICH IS THE DESIRED
START OF THE PATTERN.

OPTIONS 3,4 AND 5 BELOW ALLOW CONTINUATION OF RANDOM GENERATION FROM A PREVIOUS LOAD OF THE PROGRAM. VALUES TO BE ENTERED CAN BE FOUND IN THE LAST SUMMARY TABLE PRINTED.

3. SELECTION OF FIRST RANDOM NUMBER TO BE USED BY THE RANDOM SEEK ROUTINE. THIS OPTION WILL CAUSE THE RANDOM PATTERN GENERATION TO CONTINUE FROM THE LAST NUMBER USED ON PREVIOUS LOAD OF THE PROGRAM.

+0B75BXXXX (B= BLANK)

4. SELECTION OF FIRST RANDOM NUMBER TO BE USED BY THE RANDOM WRITE-READ ROUTINE (9). THIS OPTION WILL CAUSE THE RANDOM PATTERN GENERATION TO CONTINUE FROM THE LAST NUMBER USED ON PREVIOUS LOAD OF THE PROGRAM.

+0B77BXXXX (B= BLANK)

5. SELECTION OF FIRST RANDOM NUMBER TO BE USED BY THE RANDOM WRITE-READ ROUTINE (10). THIS OPTION WILL CAUSE THE RANDOM PATTERN GENERATION TO CONTINUE FROM THE LAST NUMBER USED ON THE PREVIOUS LOAD OF THE PROGRAM.

+0B79BXXXX (B= BLANK)

6. RUNNING MULTIPLE DRIVES.
TO RUN TWO OR MORE DRIVES IN OVERLAP PERFORM THE FOLLOWING STEPS.

- A. DUPE THE PROGRAM DECK ONCE FOR EACH ADDITIONAL DRIVE TO BE RUN.
- B. PATCH A PROGRAM ID INTO THE ADDITIONAL DECKS AS FOLLOWS (USE A PID IN THE RANGE D2-3F, WHICH WILL NOT BE INCLUDED IN THIS LOAD). PIDS D9,19, AND 39 ARE SUGGESTED.
- +07FFBXXCO (B= BLANK)
EXAMPLE TO PATCH PID-19.
+07FF 19DD
- C. MAKE UP EDIT CARDS FOR THE ADDITIONAL DECKS USING THE PATCHED PID.
- D. LOAD ALL DECKS IN OVERLAP MODE AND EXECUTE THEM.
SELECT A DIFFERENT DISK DRIVE FOR EACH EXECUTION.

NOTE- THE PATCHED PID MUST BE USED IN PLACE OF PID 09 FOR FUNCTION SELECTION AND PROGRAM EXECUTION.

7. SELECTION OF ALTERNATE CYLINDERS FOR READ/WRITE ROUTINES. THIS OPTION WILL CAUSE THE READ/WRITE ROUTINES (5,6,8,9,A, B,C,D,E) TO USE THE PATCHED CYLINDER NUMBER IN PLACE OF THE NORMALLY USED CYLINDER NUMBER.

+0B16 XXXX NORMALLY CYLINDER DD1 (0D0B HEX)
+0B17 XXXX NORMALLY CYLINDER DD2 (0D1D HEX)
+0B19 XXXX NORMALLY CYLINDER 199 (D63B HEX)
+0B1B XXXX NORMALLY CYLINDER 201 (D64B HEX)
+0B1C XXXX NORMALLY CYLINDER 202 (D65D HEX)

3.3 PROGRAM HALTS

THIS PROGRAM HAS NO NORMAL WAITS, UNLESS THE DIAGNOSTIC MONITOR OPTION OF HALT ON ERROR IS SELECTED, AND AN ERROR OCCURS. SEE DM USE PROCEDURE FOR THIS HALT.

3.4 PROGRAM TERMINATION

THE PROGRAM WILL NORMALLY TERMINATE AFTER ONE COMPLETE PASS, UNLESS THE DIAGNOSTIC MONITOR OPTION OF LOOP ALL PROGRAMS IS SELECTED. SEE DM USE PROCEDURE FOR THIS OPTION.

THE PROGRAM CAN BE MANUALLY TERMINATED IN ONE OF TWO WAYS.

1. BY THE MONITOR DE-EXECUTE OPTION.

NOTE- IF THE PROGRAM IS TERMINATED WITH AN INTERRUPT PENDING THE INTERRUPT WILL BE HANDLED BY THE MONITOR AND TREATED AS A SPURIOUS INTERRUPT.

2. BY THE USE OF THE TERMINATE PROGRAM OPTION IN SWITCH FUNCTION 0.

THE PROGRAM WILL ALSO BE TERMINATED WHEN CERTAIN ERRORS OCCUR. SEE SECTION 4.2 (ERROR MESSAGES) FOR ERRORS WHICH CAUSE PROGRAM TERMINATION.

3.5 PROGRAM RESTART

THE PROGRAM CAN BE RESTARTED FOLLOWING ANY TERMINATION BY PERFORMING A 'DE-EXECUTE' FOLLOWED BY AN 'EXECUTE' OPERATION THRU THE MONITOR.

4. PRINTOUTS

THE FOLLOWING SYMBOLS ARE USED IN ALL PRINTOUTS AND HAVE THE SAME MEANING IN ALL PRINTOUTS.

XXXX - THIS HEXADECIMAL WORD INDICATES THE TEST ROUTINE BEING RUN AT THE TIME OF THE PRINTOUT. (ROUTINE ID-RID)
YYYY - THIS HEXADECIMAL WORD INDICATES THE ACTUAL BEGINNING ADDRESS OF THE TEST ROUTINE. (ROUTINE ADDRESS-RA)
DDDD - THIS HEXADECIMAL WORD CONTAINS THE LAST DSW WORD RECEIVED FROM THE DISK
OOTF - FILE BEING RUN BY THIS PROGRAM.
T = FILE TYPE (A OR B)
F = FILE NUMBER (1,2 OR 3)

NOTE- ANY MESSAGE MODIFIER WHICH IS DESIGNATED AS DECIMAL WILL BE PRINTED IN DECIMAL ONLY IF THE NUMBER IS POSITIVE. IF ANY NUMBER SHOULD BE NEGATIVE (DUE TO SOME HARDWARE ERROR) THAT MODIFIER IS PRINTED IN HEXADECIMAL.

4.1 STATUS MESSAGES

0900 A000 XXXX YYYY DDDD DDTF

MODEL DETERMINATION.
THE PROGRAM HAS DETERMINED (FROM THE DSW FAST ACCESS BIT AND THE
SELECTED DEVICE'S AREA CODE) THAT THE DISK BEING RUN IS AS SHOWN
BY 'DDTF'. THIS PRINTOUT OCCURS ONLY ONCE EACH TIME THE PROGRAM
IS EXECUTED.

0900 A001 XXXX YYYY DDDD DDTF AAAA

AAAA= NUMBER OF RETRIES BEFORE RECOVERY. (DECIMAL)

RECOVERED SEEK ERROR. THIS PRINTOUT WILL ALWAYS BE PRECEDED BY
ONE OR MORE ERROR MESSAGES UNLESS BY-PASS ERROR MESSAGES OPTION IS
SELECTED WHICH INDICATE THE ERROR OR ERRORS WHICH CAUSED THE SEEK
RETRY. THIS PRINTOUT INDICATES THAT DSW ERRORS WERE NOT
FOUND AFTER THE COMPLETION OF THE LAST SEEK OPERATION.

0900 A002 XXXX YYYY DDDD DDTF AAAA BBBB

AAAA = NUMBER OF DSW ERRORS BEFORE RECOVERY. (DECIMAL)
BBBB= NUMBER OF COMPARE ERRORS BEFORE RECOVERY (DECIMAL)

RECOVERED READ ERROR. DATA FAILED TO COMPARE ONE OR MORE TIMES BUT WAS
CORRECT AFTER THE NUMBER OF RETRIES PRINTED. THIS MESSAGE WILL ALWAYS
BE PRECEDED BY ONE OR MORE ERROR MESSAGES UNLESS BYPASS ERROR OPTION
IS SELECTED WHICH INDICATE THE ERROR OR ERRORS WHICH CAUSED THE RETRIES.

0900 A003 XXXX YYYY DDDD DDTF AAAA

AAAA= NUMBER OF RETRIES BEFORE RECOVERY. (DECIMAL)

RECOVERED WRITE ERROR. THIS MESSAGE WILL ALWAYS BE PRECEDED
BY ONE OR MORE ERROR MESSAGES UNLESS BYPASS ERROR MESSAGES OPTION IS
SELECTED WHICH INDICATE THE ERROR OR ERRORS WHICH CAUSED THE RETRIES.
THIS MESSAGE INDICATES THAT NO DSW WORD ERRORS WERE FOUND AFTER THE
LAST WRITE.

0900 A004 XXXX YYYY DDDD DDTF

DFT TERMINATED. THE ERRORS WHICH CAUSE TERMINATION OF DFT PRECEDE
THIS PRINTOUT. THE DFT MUST BE DE-EXECUTED AND RE-EXECUTED TO
RERUN THE PROGRAM.

0900 A005 XXXX YYYY DDDD DDTF AAAA BBBB

AAAA= NUMBER OF DSW ERRORS ENCOUNTERED. (DECIMAL)
BBBB= NUMBER OF CMP ERRORS ENCOUNTERED. (DECIMAL)

READ RETRY TERMINATED.
THE READ ROUTINE RETRY PROCEDURE HAS BEEN TERMINATED, DUE TO COM-
PARE ERRORS. THIS PRINTOUT WILL BE PRECEDED BY ONE OR MORE ERROR
MESSAGES (UNLESS BYPASS ERROR MESSAGES OPTION IS SELECTED) WHICH
INDICATE THE ERROR OR ERRORS WHICH CAUSED THE RETRIES.

0900 A006 XXXX YYYY DDDD DDTF

ATTEMPTS TO SEEK A CYLINDER AND VERIFY THE SEEK BY READING SECTOR 10'S
RESULTED IN ONE OR MORE FAILURES BUT THE LAST RETRY ATTEMPT WAS
SUCCESSFUL.

4.2 COMMAND MESSAGES

0900 C000 XXXX YYYY SSSS FFFF

SSSS= CONTENTS OF SWITCH FUNCTION TWO (HEXADECIMAL)
FFFF= ALWAYS FFFF (HEXADECIMAL)

OPERATOR ERROR.
SELECTED A DEVICE THRU SWITCH FUNCTION TWO WHICH IS NOT EDITED.

0900 C001 XXXX YYYY DDDD DDTF

OPERATOR ERROR.
THE DEVICE SELECTED TO BE RUN DOES NOT HAVE A PROPERLY INITIAL-
IZED PACK INSTALLED.

0900 C002 XXXX YYYY DDDD DDTF

XXXX= CONTENTS OF SWITCH FUNCTION ONE (HEXADECIMAL)

OPERATOR ERROR.
AN INVALID ROUTINE HAS BEEN SELECTED FOR LOOPING.

4.3 DATA MESSAGE

0900 0001 XXXX YYYY DDDD DDTF PSCT SKCT SSKE HSKE
DDDD DDTF PSCT RCT SRDE HRDE
DDDD DDTF PSCT WRCT SWRE HWRE
DDDD DDTF PSCT RECL
DDDD DDTF PSCT FRNS LRNS
DDDD DDTF PSCT FRN1 LRN1
DDDD DDTF PSCT FRN2 LRN2

PSCT= PASS NUMBER (THIS REMAINS THE SAME FOR ALL SEVEN
LINES) (DECIMAL)
SKCT= TOTAL NUMBER OF SEEKS ISSUED EXCLUSIVE OF RETRIES (DECIMAL)
SSKE= TOTAL NUMBER OF SOFT SEEK ERRORS (DECIMAL)
HSKE= TOTAL NUMBER OF HARD SEEK ERRORS (DECIMAL)
RCT= TOTAL NUMBER OF READS ISSUED EXCLUSIVE OF RETRIES (DECIMAL)
SRDE= TOTAL NUMBER OF SOFT READ ERRORS (DECIMAL)
HRDE= TOTAL NUMBER OF HARD READ ERRORS (DECIMAL)
WRCT= TOTAL NUMBER OF WRITES ISSUED EXCLUSIVE OF RETRIES (DECIMAL)
SWRE= TOTAL NUMBER OF SOFT WRITE ERRORS (DECIMAL)
HWRE= TOTAL NUMBER OF HARD WRITE ERRORS (DECIMAL)
RECL= NUMBER OF WORDS WRITTEN ON A SECTOR BY A WRITE USING
A WORD COUNT OF 400. (DECIMAL)
FRNS= FIRST RANDOM SEEK ISSUED BY THE RANDOM SEEK
ROUTINE (HEXADECIMAL)
LRNS= LAST RANDOM SEEK ISSUED BY THE RANDOM SEEK
ROUTINE (HEXADECIMAL)
FRN1= FIRST RANDOM DATA WORD USED BY ROUTINE 9 (HEXADECIMAL)
LRN1= LAST RANDOM DATA WORD USED BY ROUTINE 9 (HEXADECIMAL)
FRN2= FIRST RANDOM DATA WORD USED BY ROUTINE 10 (HEXADECIMAL)
LRN2= LAST RANDOM DATA WORD USED BY ROUTINE 10 (HEXADECIMAL)

SUMMARY PRINTOUT. OCCURS AT THE END OF EACH COMPLETE PROGRAM
PASS. ALL COUNTS ARE INITIALIZED TO ZERO WHENEVER THE PROGRAM IS
EXECUTED, AND WILL CONTINUE TO ADVANCE UNTIL THE PROGRAM IS DE-EXECUTED.
ALL COUNTS WILL ADVANCE FROM 0000 THRU 9999 AND THEN RESET TO 0000.

4.4 ERROR MESSAGES

0900 ECC1 XXXX YYYY ODOO OCTF AAAA BBBB

AAAA = DATA WORD OF LAST IOCC ISSUED (HEXADECIMAL)
BBBB = CONTROL WORD OF LAST IOCC ISSUED (HEXADECIMAL)

LDST INTERRUPT. FOLLOWING EACH SEEK, READ, OR WRITE
THE PROGRAM SETS UP A LOOP THRU THE MONITOR WAITING FOR INTERRUPT. IF THE
INTERRUPT HAS NOT OCCURED WITHIN A SPECIFIC NUMBER OF LOCPs THIS
PRINTOUT WILL OCCUR.

IF THIS PRINTOUT IS FOLLOWED BY A MONITOR PRINTOUT INDICATING
UNEXPECTED INTERRUPT (FOR THE DISK) THEN THE INTERRUPT OCCURED, BUT WAS
AT LEAST ONE SECCND LATE.

0900 EOD2 XXXX YYYY DDDD OOTF AAAA BBBB

AAA = DATA WORD OF LAST IOCC ISSUED.. (HEXADECIMAL)
BBBB = CONTROL WORD OF LAST IOCC ISSUED (HEXADECIMAL)

SPURIOUS INIERPUPT. THIS PRINTOUT CAN ONLY OCCUR
WHEN THIS PROGRAM HAS REQUESTED THE DISK FROM THE MONITOR, BUT IS NOT
CURRENTLY EXPECTING AN INTERRUPT.

0900 EC03 XXXX YYYY ODOO OOTF

INCORRECT DSW.
THE DISK IS BUSY AND/OR NOT READY WHEN IT SHOULD BE BOTH READY
AND NOT BUSY. THIS CHECK IS MADE PRIOR TO ISSUING ANY SEEK, READ,
OR WRITE. AS LONG AS THE DISK REMAINS BUSY AND/OR NOT READY THIS
PRINTOUT WILL REPEAT APPROXIMATELY EVERY 12 SECCNDS UNLESS THE PRO-
GRAM IS DE-EXECUTED.

0900 E004 XXXX YYYY DDOO OCTF AAAA BBBB

AAAA = DATA WORD OF IOCC JUST ISSUED (HEXADECIMAL)
BBBB = CONTROL WORD OF IOCC JUST ISSUED (HEXADECIMAL)

INCORRECT DSW.
THE DISK IS NOT BUSY AND/OR READY WHEN IT SHOULD BE BOTH BUSY
AND NOT READY. THIS CHECK IS MADE IMMEDIATELY AFTER EXECUTION OF
EVERY SEEK, READ, OR WRITE. THIS MESSAGE IS PRINTED ONLY ONCE,
FOLLOWING WHICH THE PROGRAM ENTERS A LOOP THRU THE MONITOR CHECKING
FOR LCST INTERRUPT.

0900 ECD5 XXXX YYYY DDOO OOTF AAAA BBBB

AAAA= DATA WORD OF LAST IOCC ISSUED (HEXADECIMAL)
BBBB= CONTROL WORD OF LAST IOCC ISSUED (HEXADECIMAL)

INVALID SEEK ADDRESS (IPIDB ONLY). AFTER A SEEK THE DSW INDICATED
A SEEK ERROR WHICH WAS AN INVALID ADDRESS EPROR. THIS OPERATION
WILL BE RETRIED A MAXIMUM OF SEVEN TIMES. NOTE- IF THE LOCK ON ERROR

OPTION IS SELECTED THIS ROUTINE WILL LOOP UNTIL THE SWITCH IS CLEARED.
0900 E006 XXXX YYYY DDOO OOTF AAAA BBBB

AAAA=DECIMAL CYLINDER NUMBER SEEKED FROM.
BBBB=DECIMAL CYLINDER NUMBER SEEKED TO.

HARD SEEK ERRDR. (1810B ONLY) EIGHT SEEKS HAVE ALL RESULTED IN
SEEK ERRORS WHICH ARE INVALID ADDRESS ERRORS.

0900 E007 XXXX YYYY ODOO OOTF AAAA BBBB

AAAA- DATA WORD OF LAST IOCC ISSUED (HEXADECIMAL)
BBBB- CONTROL WORD OF LAST IOCC ISSUED (HEXADECIMAL)

SEEK INCCMPLETE (1810B ONLY). AFTER A SEEK THE DSW WORD INDICATES
A SEEK ERROR WHICH IS A SEEK INCCMPLETE ERROR ON THE 1810B. SEEK
OPERATION WILL BE RETRIED A MAXIMUM OF SEVEN TIMES.

0900 EDO8 -THIS MESSAGE IO IS NOT USED.

C5C0 E009 XXXX YYYY DDOO OCTF

DSW READ ERROR. THE DATA READ WILL BE CHECKED FOLLOWING THIS
PRINTOUT. THE ROUTINE WILL THEN ENTER A RETRY OPERATION. UP TO
A MAXIMUM OF SEVEN RETRIES WILL BE EXECUTED.
NOTE- IF THE LOCK ON ERROR OPTION IS SELECTED THE ROUTINE WILL LOOP
IN THIS READ UNTIL THE SWITCH IS CLEARED.

0900 EDDA XXXX YYYY DDOO OOTF AAAA BBBB

AAAA= NUMBER OF TIMES DSW ERRORS WERE FOUND (DECIMAL)
BBBB= NUMBER OF TIMES COMPARE ERRORS WERE FOUND (DECIMAL)

HARD DSW READ ERROR. READ OPERATION WAS UNSUCCESSFUL AFTER EIGHT
TRIES.

0900 E005 XXXX YYYY ODOO OOTF

DSW WRITE ERROR. THE RETRY PROCEURE WILL BE INITIATED FOR THE WRITE.
NOTE- IF THE LOCK ON ERROR OPTION IS SELECTED THE ROUTINE WILL LOOP
IN THIS WRITE OPERATION UNTIL THE SWITCH IS CLEARED.

0900 E00C XXXX YYYY DDOO OCTF AAAA

AAAA= NUMBER OF WRITE DSW ERRORS (DECIMAL)

HARD WRITE ERROR. THE DSW WORD INDICATED AN ERROR ON ALL OF EIGHT WRITES.

0900 E00D XXXX YYYY DDOO OOTF AAAA BBBB CCCC

AAAA- CYLINDER NUMBER SEEKED FROM(HEXADECIMAL)
BBBB- CYLINDER NUMBER EXPECTED (HEXADECIMAL)
CCCC- CYLINDER NUMBER READ FROM DISK (HEXADECIMAL)

SEEK ERROR OCCURRED. ATTEMPTED TO SEEK CYLINDER BBBB FROM CY-
LINDER AAAA, BUT WHEN SECTOR 10'S WERE READ AFTER THE SEEK, THEY
INDICATED THAT THE DISK ACTUALLY REACHED CYLINDER CCCC. THIS WAS
DETERMINED BY READING ALL EIGHT SECTOR 10'S AND THEN CHECKING FOR THEM
CONTAINING THE SAME CYLINDER NUMBER. SEEK RETRY WILL BE INITIATED
USING THE CYLINDER NUMBER READ AS THE PRESENT ARM POSITION. NOTE IF
THE LOCK ON ERROR OPTION IS SELECTED THIS ROUTINE WILL LOOP UNTIL THE
SWITCH IS CLEARED.

0900 E0DE XXXX YYYY DDOO OOTF AAAA BBBB CCCC EEEE
DDDD OOTF FFFF GGGG HHHH JJJJ

MODIFIERS, AAAA THRU JJJJ CONTAIN THE SECTOR 10'S IN HEXADECIMAL IN THE
ORDER READ.

READ ERROR.
ISSUED A SEEK OPERATION AND ATTEMPTED TO VERIFY THE SEEK. HOWEVER,
WHEN SECTOR 10'S WERE READ FROM THE CYLINDER, THEY DID NOT CONTAIN THE
SAME CYLINDER 10 OR WERE NOT SEQUENTIAL ON ALL OF EIGHT READS. THE
1810 A/B FUNCTION TEST IS TERMINATED. IF A RERUN IS DESIRED, THE
PROGRAM MUST BE DE-EXECUTED AND RE-EXECUTED.

0900 E00F- THIS MESSAGE ID IS NOT USED.

0900 E010 XXXX YYYY DDDD COTF AAAA BBBB CCCC ODEF GGGG (LINE 11
DDDD COTF HHHH JJJJ KKKK (LINE 21
DDDD COTF LLLL (LINE 31

AAAA- CYLINDER NUMBER EXPECTED (DECIMAL)
BBBB- CYLINDER NUMBER READ FROM THE DISK (DECIMAL)
CCCC- SECTOR ID EXPECTED
C- HEAD NUMBER (0 OR 1)
D- SECTOR NUMBER (0 THRU 3)
ODEF- SECTOR ID READ FROM THE DISK
E- HEAD NUMBER (0 OR 1)
F- SECTOR NUMBER (0 THRU 3)
GGGG- NUMBER OF WORDS EXPECTED IN DECIMAL
HHHH- WORD NUMBER IN RECORD IN DECIMAL (1 THRU NUMBER OF WORDS READ)
JJJJ- DATA EXPECTED (HEXADECIMAL)
KKKK- DATA RECEIVED (HEXADECIMAL) -NOTE-I/O AREA IS PRESET TO FFFF
LLLL- TOTAL NUMBER OF BAD DATA WORDS (DECIMAL)

DATA COMPARE ERROR(S).
THE ROUTINE ID (RID) IS AN IMPORTANT CLUE AS TO THE MEANING OF THIS MESSAGE. CHECK THE ROUTINE DESCRIPTION (SECTION 5.1) BEFORE CONTINUING WITH THIS MESSAGE.
PRIOR TO ISSUING A READ XIO, THE I/O AREA (STARTING AT 0800 HEX) IS SET TO HEXADECIMAL 'FFFF'. AFTER THE READ INTERRUPT HAS OCCURRED, THE DATA IS CHECKED FOR ERRORS. THE FIRST LINE OF THE ERROR MESSAGE WILL INDICATE IF THE SECTOR ID JUST READ WAS AS EXPECTED. THIS LINE IS PRINTED IN DECIMAL AND IF THE SECTOR ID IS IN ERROR, THE SECOND WILL REPEAT THE SAME INFORMATION, ONLY IN HEXADECIMAL FOR BIT BY BIT COMPARISON.

NOTE THIS ROUTINE NORMALLY PRINTS ONLY THE FIRST ERROR UNLESS THE OPTION PRINT-ALL-ERRORS IS SELECTED.

LINE 2 IS REPEATED FOR THE WORD PRECEDING THE BAD WORD, THE BAD WORD AND THE WORD FOLLOWING THE BAD WORD. FOR EXAMPLE, ASSUME THAT WORD 1 (SECTOR ID) IS INCORRECT. ASSUME WE EXPECTED CYLINDER 1, SECTOR 00 AND THE DATA BEING READ WAS E5E5. THE PRINTOUT WOULD LOOK LIKE THE FOLLOWING.

*****SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT*****
0900 E010 XXXX YYYY DDDD COTF 0001 0000 0000 0000 0321
DDDD COTF 0001 0000 0000
DDDD COTF 0002 E5E5 E5E5
DDDD COTF 0001

*****SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT*****

THIS PRINTOUT SHOWS THAT THE CYLINDER NUMBER WAS READ WRONG. IT FURTHER SHOWS THAT WORD 1 CONTAINED THE INCORRECT CYLINDER NUMBER, BUT THE CORRECT SECTOR ID. WORD 2 CONTAINED THE CORRECT DATA. THE NUMBER OF WORDS READ WAS 321 AND TOTAL ERRORS WAS 1, THEREFORE ONLY THE CYLINDER NUMBER WAS IN ERROR.

AS A SECOND EXAMPLE ASSUME THAT WORDS 3 AND 5 READ INTO CORE BAD, BUT ALL OTHER WORDS WERE READ CORRECTLY. ASSUME ALSO THAT THE OPTION FOR PRINT ALL ERRORS IS SELECTED. (CYLINDER 1, SECTOR 0 AND DATA)

*****SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT*****
0900 E010 XXXX YYYY DDDD COTF 0001 0001 0000 0000 0321
(LINE 11 DDDD COTF 0002 1313 1313
(LINE 21 DDDD COTF 0003 1313 0313
(LINE 31 DDDD COTF 0004 1313 1313
(LINE 41 DDDD COTF 0005 1313 0313
(LINE 51 DDDD COTF 0006 1313 1313
(LINE 61 DDDD COTF 0002
*****SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT SAMPLE PRINTOUT*****

THE PRINTOUT SHOWS 2 TOTAL ERRORS AND WORDS 3 AND 5 HAVE DROPPED BIT 3. ALL OTHER WORDS ARE CORRECT. IF THE PRINT-ALL-ERRORS OPTION HAD NOT BEEN SELECTED THEN LINES 4 AND 5 WOULD NOT HAVE APPEARED IN THIS PRINTOUT.

THE WORD PRECEDING AND WORD FOLLOWING THE ERROR WORD ARE PRESENTED IN THE PRINTOUT TO PROVIDE AS MUCH OF THE PATTERN USED AS PRACTICAL, ESPECIALLY FOR THE RANDOM PATTERN ROUTINES.

0900 E011 XXXX YYYY DDDD COTF AAAA BBBB CCCC ODEF GGGG

AAAA- DECIMAL CYLINDER NUMBER EXPECTED.
BBBB- DECIMAL CYLINDER NUMBER READ FROM DISK.
CCCC- SECTOR ID EXPECTED.
C- HEAD NUMBER (0 OR 1)
D- SECTOR NUMBER (0 - 3)
ODEF- SECTOR ID READ FROM DISK.
E- HEAD NUMBER (0 OR 1)
F- SECTOR NUMBER (0-3)
GGGG- NUMBER OF WORDS THAT SHOULD HAVE BEEN READ. (DECIMAL)

INPUT TABLE OVERFLOW.
PROBABLY TRANSFERRED MORE WORDS THAN THE WORD COUNT CALLED FOR ON A READ. AT LEAST ONE OF THE TWO WORDS FOLLOWING THE READ RECORD WAS NOT THE SAME AS THE PRESET VALUE OF HEXADECIMAL 'FFFF'.

0900 E012 XXXX YYYY DDDD COTF AAAA

AAAA- PRESENT CYLINDER NUMBER (DECIMAL)

THE HOME INDICATOR IN THE DSW IS INCORRECT. IT IS OFF WHEN PRESENT CYLINDER IS 0000 OR ON WHEN PRESENT CYLINDER IS NOT 0000. THIS CHECK IS MADE AFTER EVERY SEEK.

0900 E013- THIS MESSAGE ID IS NOT USED.

0900 E014 XXXX YYYY DDDD COTF

THE DSW FAST ACCESS BIT (BIT 131 IS INCORRECT. THE BIT IS ON FOR A 1810A OR OFF FOR A 1810B.

0900 E015 XXXX YYYY DDDD COTF

A WRITE WITH A WORD COUNT OF 400 FAILED TO CAUSE THE DSW 'ANY ERROR' AND/OR 'DATA ERROR' BITS TO BE SET.

0900 E016 XXXX YYYY DDDD COTF

A READ WITH A WORD COUNT OF 370 FAILED TO CAUSE THE DSW 'ANY ERROR' AND/OR 'DATA ERROR' BITS TO BE SET.

0900 E017 XXXX YYYY DDDD DDTF AAAA
AAAA= DECIMAL NUMBER OF WORDS WRITTEN
SECTOR GAP TEST.
A WRITE WITH A WORD COUNT OF 400 WROTE LESS THAN 331 WORDS, OR MORE THAN 358.
0900 E018 XXX YYY DDD DDTF
WRITING 400 WORDS ON CYLINDER 2-SECTOR ZERO DESTROYED DATA ON CYLINDER 2-SECTOR ONE.
0900 E019- THIS MESSAGE ID IS NOT USED.
0900 E01A XXXX YYYY DDDD CCTF AAAA BB88
AAAA= NUMBER OF TIMES DSW ERRORS WERE FOUND DURING READ-CHECK(DECIMAL)
BB88= NUMBER OF TIMES DATA WAS TRANSFERRED BY A READ CHECK (DECIMAL)
ROUTINE B SUMMARY.
THIS PRINTOUT WILL OCCUR ONLY IF ROUTINE B ENCOUNTERED AN ERROR.
0900 E01B XXXX YYYY DDDD CCTF
INVALID SEEK ERROR.
A SEEK CYLINDER 203 WAS ISSUED AND THE INTERRUPT OSW DID NOT CONTAIN THE SEEK ERROR INDICATION.
THIS PRINTOUT OCCURS ONLY IF RUNNING A 1810B
0900 E01C XXXX YYYY DDDD CCTF
C.E. MODE ERROR.
THE OISW WAS PLACED IN C.E. MODE AND THE DSW SENSED WITHOUT RESET. THE C.E. BUSY AND/OR C.E. NOT READY BITS WERE FOUND TO BE ON AT THIS TIME.
NOTE- THIS ROUTINE IS ALWAYS BYPASSED IF RUNNING THE PROGRAM AS AN ON LINE FUNCTION TEST.
0900 E01D XXXX YYYY DDDD CCTF
STORAGE PROTECT ERROR.
ONE WORD WAS READ FROM THE DISK INTO A STORAGE PROTECTED WORD AND THE STORAGE PROTECT VIOLATION BIT WAS NOT FOUND ON IN THE DSW WORD. THIS PRINTOUT WILL ALWAYS OCCUR IF THE WRITE STORAGE PROTECT SWITCH IS IN THE 'NO' POSITION.
NOTE- THIS ROUTINE IS ALWAYS BYPASSED IF RUNNING THE PROGRAM AS AN ON LINE FUNCTION TEST.
0900 E01E XXXX YYYY DDDD DDTF AAAA
AAAA= HEXADECIMAL CONTENTS OF STORAGE PROTECTED LOCATION FOLLOWING THE READ. (THIS WORD WAS PRESET TO 'FFFF' PRIOR TO THE READ)
STORAGE PROTECT ERROR.
ONE WORD WAS READ FROM THE DISK INTO STORAGE PROTECTED LOCATION, '08C1'. AND DATA WAS TRANSFERRED INTO THE PROTECTED WORD. THIS PRINTOUT WILL ALWAYS OCCUR IF THE WRITE STORAGE PROTECT SWITCH IS IN THE 'NO' POSITION. THIS ROUTINE IS ALWAYS BYPASSED IF RUNNING THE PROGRAM AS AN ON LINE FUNCTION TEST.

0900 E01F XXXX YYYY DDDD DDTF ABCO
ABCO-
A= FIRST SECTOR COUNT FOUND (S/B=01)
B= SECOND SECTOR COUNT FOUND (S/B=11)
C= THIRD SECTOR COUNT FOUND (S/B=21)
D= FOURTH SECTOR COUNT FOUND (S/B=31)

SECTOR HIGH LOW ERROR.
THE OSW WORD IS CHECKED FOR PROPER SECTOR COUNT STEPPING, STARTING WITH SECTOR ZERO. THE ROUTINE THEN CHECKS THE FOUR DIFFERENT COUNTS OBTAINED AND PRINTS IF STEPPING IS INCORRECT. THIS ROUTINE IS ALWAYS BYPASSED IF RUNNING THE PROGRAM AS AN ON LINE FUNCTION TEST, OR IF RUNNING IN OVERLAP.

5. COMMENTS

5.1 DESCRIPTION OF TEST ROUTINES

DECIMAL ROUTINE NUMBER	HEXADECIMAL ROUTINE NUMBER	DESCRIPTION
0	0	THIS IS A ROUTINE WHICH IS RUN ONCE EACH TIME THE PROGRAM IS EXECUTED. THIS ROUTINE IS ALWAYS RUN REGARDLESS OF ANY OPTIONS. THE ROUTINE WILL.- A. CHECK THE SECTOR COUNT IN THE DSW FOR PROPER STEPPING. NOTE- THIS ROUTINE IS ONLY RUN IF RUNNING OFF LINE AND IN NON-OVERLAP MODE. B. SENSE DISK OSW AND USE FAST ACCESS BIT TO DETERMINE DISK MODEL. ISSUE A SEEK TO HOME THROUGH THE XEQ ROUTINE. THE 'MODEL' INDICATOR SWITCH IS SET FOR 1810B, CLEARED FOR 1810A. THE FILE IO IAI,A2,A3,B1,B2,B3I USED FOR PRINTOUTS IS CREATED ALSO. C. READ 321 WORDS OF HEXADECIMAL 'I313' FROM CYLINDER 0, SECTOR 0. VERIFY ALL DATA. D. SEEK CYLINDER 199 THRU THE VERIFY ROUTINE. READ SECTOR 3 TO GET THE BAD CYLINDER TABLE. CHECK THAT THE SECOND WORD OF THIS SECTOR IS HEXADECIMAL 'CEDC'. IF NOT, TERMINATE THE OPT TO PREVENT POSSIBLE CUSTOMER BACK DAMAGE. THIS ROUTINE WILL TEST THE DISK DSW INDICATORS. A. TEST THE FAST ACCESS OSW BIT. SHOULD BE ON FOR A 1810B AND OFF FOR A 1810A. B. IF THE MODEL SWITCH INDICATES 1810B, ISSUE AN INVALID SEEK AND CHECK THE DSW SEEK ERROR BIT FOR BEING ON. C. PLACE THE DISK IN CE MODE AND CHECK THAT NEITHER CE DSW BIT IS ON. NOTE- C ABOVE IS BYPASSED IF THE PROGRAM IS RUNNING AS AN ON LINE FUNCTION TEST. LOOP THIS ROUTINE 50 TIMES.
1	1	

2 2 READ ONE WORD INTO A STORAGE PROTECTED WORD AND CHECK THE DSW SPV BIT FOR BEING ON. CHECK ALSO THAT NO DATA WAS TRANSFERRED INTO THE PROTECTED WORD.
NOTE- THIS ROUTINE IS BYPASSED IF RUNNING THE PROGRAM AS AN ON LINE FUNCTION TEST.
LOOP THIS ROUTINE 50 TIMES.

3 3 EXECUTE SEEKS OF 2 IN, 1 OUT FROM HOME TO CYLINDER 202 (EXCEPT CYLINDERS 90-110). EXECUTE SEEKS OF 2 OUT, 1 IN FROM CYLINDER 202 TO HOME (EXCEPT CYLINDERS 90-110). VERIFY ALL SEEKS BY READING ALL EIGHT SECTOR ID'S.
SEEK OUT = SEEK TOWARD HOME.
SEEK IN = SEEK AWAY FROM HOME.

4 4 EXECUTE 100 RANDOM SEEKS WITHOUT SEEKING HOME BETWEEN SEEKS. IF THE GENERATED NUMBER WOULD CAUSE AN INVALID SEEK OR A SEEK TO CYLINDERS 90-110 IT WILL BE REJECTED AND A NEW NUMBER IS GENERATED. VERIFY EACH SEEK BY READING ALL EIGHT SECTOR ID'S. THE RANDOM NUMBER GENERATOR WILL NOT BE RESET EXCEPT BY RE-LOADING THE DFT TO ESTABLISH A WIDE VARIETY OF RANDOM SEEKS. PROVISION IS MADE FOR EXECUTING THE SAME SEQUENCE OF SEEKS THRU THE LOCK ON ERROR OPTION, OR THE PATCH STARTING SEEK OPTION. (REF. SEC. 3.2-PATCH OPTION)

5 5 READ 320 WORDS OF HEXADECIMAL 1313 FROM CYLINDER 1, SECTOR D AND VERIFY THE DATA READ.
LOOP THIS ROUTINE 50 TIMES.

6 6 READ 320 WORDS OF HEXADECIMAL E5E5 FROM CYLINDER 201, SECTOR 6 AND VERIFY CORRECT DATA.
LOOP THIS ROUTINE 50 TIMES.

7 7 READ WITH A WORD COUNT OF ZERO AND CHECK THE 1/0 AREA TO SEE THAT NO WORDS ARE TRANSFERRED. LOOP THIS ROUTINE 50 TIMES.

8 8 READ-CHECK CYLINDER 1, SECTOR D, AND MAKE SURE NO WORDS ARE TRANSFERRED. IF ERRORS ARE FOUND ONLY THE FIRST SUCH ERROR IS PRINTED ALONG WITH TOTAL NUMBER OF ERRORS. (UNLESS THE PRINT ALL ERRORS OPTION IS SELECTED.) LOOP THIS ROUTINE 50 TIMES.

9 9 GENERATE 320 WORDS OF RANDOM DATA AND WRITE THESE WORDS ON CYLINDER 2, SECTOR 0. READ THE DATA WRITTEN AND CHECK THE DATA. IF ANY COMPARE DATA ERRORS ARE FOUND, RETRY THE READ (NOT THE WRITE) UP TO SEVEN TIMES. IF LOCK ON ERROR OPTION IS SELECTED LOOP THE ROUTINE (IF ERRORS WERE FOUND) USING THE SAME DATA UNTIL THE SWITCH IS CLEARED. IF LOCK ON ERROR OPTION IS NOT SELECTED, OR IF NO ERRORS EXIST, LOOP THE ROUTINE FIFTY TIMES WITH FIFTY DIFFERENT RANDOM PATTERNS.
NOTE- PROVISION IS MADE FOR ALWAYS USING THE SAME PATTERN THRU THE PATCH OPTION. (REF. SEC. 3.2-PATCH OPTION)

10 A SAME ROUTINE AS ROUTINE 9 EXCEPT THAT CYLINDER 202, SECTOR 6 IS USED.

11 B WRITE CYLINDER 2, SECTOR D USING A WORD COUNT OF 1 AND DATA OF E5E5. READ THE SECTOR AND SEE THAT ALL WORDS EXCEPT THE FIRST ARE ZERO. LOOP THE ROUTINE 50 TIMES.

12 C WRITE CYLINDER 2, SECTOR D WITH A WORD COUNT OF 400 AND DATA OF HEXADECIMAL 1313. READ SECTOR 0 AND DETERMINE HOW MANY WORDS WERE WRITTEN AND SAVE FOR THE SUMMARY. IF LESS THAN 331 OR MORE THAN 358 WORDS WERE WRITTEN, PRINT AN ERROR MESSAGE. CHECK THAT THE SECTOR ID IN CYLINDER 2, SECTOR 1 IS NOT DESTROYED. CHECK THAT BOTH ANY ERROR AND DATA ERROR BITS IN THE DSW ARE ON. LOOP THIS ROUTINE 50 TIMES.
NOTE- IF THE SECTOR ID IN CYLINDER 2, SECTOR 1 IS DESTROYED IT WILL BE RESTORED BY THE ROUTINE.

13 D WRITE 320 WORDS OF HEXADECIMAL 1313 IN CYLINDER 2, SECTOR D. READ AND VERIFY CORRECT DATA.
LOOP THIS ROUTINE 50 TIMES.

14 E WRITE 320 WORDS OF HEXADECIMAL E5E5 IN CYLINDER 202, SECTOR 6. READ AND VERIFY CORRECT DATA.
LOOP THIS ROUTINE 50 TIMES.

5.2 DESCRIPTION OF SUB-ROUTINES

ALL THE SUBROUTINES DESCRIBED PROVIDE ANY NECESSARY ERROR AND STATUS PRINTOUTS. (REFERENCE SECTION 4.)

ALL SUBROUTINES WHICH REQUIRE THE OPTION ARE PROVIDED WITH THE 'LOCK ON ERROR' OPTION. THIS OPTION WILL LOOP THE SUBROUTINE IN THE SMALLEST POSSIBLE LOOP WHICH CAUSED THE ORIGINAL ERROR. ONCE AN ERROR OCCURS, AND THE OPTION IS SELECTED, THE ROUTINE WILL REMAIN IN THE LOOP AS LONG AS THE 'LOCK ON ERROR' SWITCH IS ON, WHETHER THE ERROR RECURS OR NOT. IF NO ERROR OCCURS THEN THE OPTION HAS NO EFFECT.

CALL

BSI 2 STMLS-TB

THIS SUBROUTINE IS USED TO SET MLSCF ENTRIES WHEN EXITING TO THE MONITOR.

THE ROUTINE WILL SAVE INDEX REGISTERS 1 AND 2, SET AN MLSCF ENTRY, AND EXIT TO THE MONITOR 'START' ROUTINE.

UPON RETURN FROM THE MONITOR THE SUBROUTINE WILL RESTORE INDEX REGISTERS 1 AND 2 AND BRANCH TO CALL+1.

BSI 2 ZRQOV-TB

THIS ROUTINE IS USED TO REQUEST USE OF THE DISK FROM THE DIAGNOSTIC MONITOR.

THE ROUTINE WILL FIRST CHECK TO SEE IF THE DISK IS ALREADY REQUESTED.

IF NOT, THEN A CALL IS MADE TO THE DIAGNOSTIC MONITOR ROUTINE, REQDV, AND UPON RETURN EXIT IS TO CALL+1.

IF ALREADY REQUESTED THE ROUTINE MERELY EXITS TO CALL+1.

BSI 2 XEQ-TB

THIS SUBROUTINE BUILDS AND EXECUTES AN XIO INSTRUCTION. THE ROUTINE THEN LOOPS THRU THE DIAGNOSTIC MONITOR WAITING FOR AN INTERRUPT.

IF THE INTERRUPT DOES NOT OCCUR WITHIN A SPECIFIC NUMBER OF LOOPS, THE MESSAGE ID FOR LOST INTERRUPT IS PRINTED AND THE FUNCTION TEST IS TERMINATED.

IF THE INTERRUPT OCCURS IN TIME THE ROUTINE EXITS DIRECTLY TO CALL+1 WITH THE DSW SENSED AT INTERRUPT STORED IN LOCATIONS ZSNS AND TBDSW.

BSI 2 ZRLDV-TB

THIS ROUTINE IS USED TO RELEASE THE DISK TO THE MONITOR. THE ROUTINE FIRST CHECKS TO SEE IF THE DISK IS ALREADY RELEASED. IF NOT, THE ROUTINE CALLS THE DIAGNOSTIC MONITOR ROUTINE, RELD. UPON RETURN FROM THE MONITOR THE ROUTINE EXITS TO CALL+1. IF THE DISK IS ALREADY RELEASED, THE ROUTINE MERELY EXITS TO CALL+1.

BSI 2 CKLK-TB
DC RETURN 1

THIS SUBROUTINE IS USED TO CHECK FOR THE LOCK ON ERROR OPTION SELECTED. IF THE SWITCH IS ON THE ROUTINE RETURNS INDIRECTLY VIA THE ADDRESS RETURN1 IN CALL+1. IF THE SWITCH IS OFF THE ROUTINE RETURNS DIRECTLY TO CALL+2.

BSI 2 SETV-TB
(A REGISTER CONTAINS DATA TO SET)

THIS SUBROUTINE SETS THE I/O AREA TO THE CONTENTS OF THE A REGISTER. THE NUMBER OF WORDS TO BE SET MUST BE STORED IN LOCATION COMA PRIOR TO THE CALL.

BSI 2 RNDOM-TB
(A REGISTER MUST CONTAIN A NUMBER)

THIS ROUTINE USES THE NUMBER IN THE A REGISTER TO GENERATE A RANDOM NUMBER, AND RETURNS TO CALL+1 WITH THE NEW NUMBER IN THE A REGISTER. THE NUMBER IN THE A REGISTER AT THE TIME OF THE CALL IS NORMALLY THE LAST RNDOM NUMBER USED.

BSI 2 STMSG-TB
DC FMM

F= FORM NUMBER
MM= MESSAGE ID.

NOTE IF BIT ZERO OF THE CALL EQUALS 1
THIS MESSAGE IS PRINTED AS AN ADDITIONAL
LINE MESSAGE AND PID-MID-RID-RAD WILL
NOT APPEAR IN THE LINE OF PRINT.

THIS ROUTINE WILL SET UP THE MESSAGE SPECIFIED BY THE FORM NUMBER. THE MESSAGE ID IS THEN CHECKED TO SEE IF HEX CHARACTER ONE IS AN E. IF IT IS AN E THE DIAGNOSTIC MONITOR ERROR ROUTINE IS CALLED. OTHERWISE THE LOG ROUTINE IS CALLED, UNLESS THE BYPASS LOG MESSAGES OPTION IS SELECTED. IF THE CALL WAS TO THE ERROR ROUTINE THE DIAGNOSTIC MONITOR OPTION OF LOOP ON ERROR IS CHECKED AND IF SELECTED THE TEST ROUTINE CAUSING THE ERROR WILL BE LOOPED. THIS ROUTINE NORMALLY EXITS TO CALL+2.

BSI 2 VERFY-TB
DC CYL.NO.DESIRED
DC ERROR RETURN

THIS ROUTINE WILL SEEK THE DESIRED CYLINDER BY CALLING ROUTINE SEEK. UPON RETURN FROM THE SEEK ROUTINE, THIS ROUTINE WILL READ SECTOR IDS. IF ALL SECTOR IDS ARE FROM THE SAME CYLINDER AND THE SECTOR ADDRESSES ARE SEQUENTIAL THE ROUTINE THEN CHECKS FOR DESIRED CYLINDER. IF THIS IS THE DESIRED CYLINDER THE ROUTINE EXITS TO CALL+3.

IF ALL IDS ARE NOT FROM THE SAME CYLINDER, OR SECTOR ADDRESSES ARE NOT SEQUENTIAL, THE ROUTINE ENTERS A RETRY PROCEDURE. IF THE ROUTINE CANNOT VERIFY THE CYLINDER REACHED ON ALL OF EIGHT TRIES THE FUNCTION TEST IS TERMINATED. (UNLESS THE LOCK ON ERROR OPTION IS SELECTED.)

ASC 1 SEEK
(A REGISTER MUST CONTAIN THE DESIRED
CYLINDER NUMBER, RIGHT JUSTIFIED)

THIS SUBROUTINE BUILDS THE CORRECT IOCC WORDS FOR THE DISK TYPE (1810 A OR B) BEING RUN, AND ISSUES THE COMMAND, THRU THE XEQ SUBROUTINE.

IF DSW ERRORS ARE FOUND AFTER THE INTERRUPT, UP TO SEVEN RETRIES WILL OCCUR.

IF THE DISK IS A 1810B AND ALL EIGHT TRIES RESULTED IN SEEK INCOMPLETE DSW ERROR, THE FUNCTION TEST WILL BE TERMINATED.

IF THE ERRORS WERE NOT SEEK INCOMPLETE, BUT DID PERSIST THROUGH ALL 8 TRIES THE ROUTINE EXITS BACK TO VERIFY ROUTINE TO AN ERROR RETURN. IF ANY TRY RESULTED IN NO DSW ERRORS THEN THE ROUTINE EXIT IS NORMAL.

BSI 2 READ-TB
DC WORD COUNT
DC NUMBER (USED IN CALL TO CMP ROUTINE)
DC ERROR RETURN 1
(A REG. CONTAINS SECTOR DESIRED.)

THIS ROUTINE WILL BUILD THE READ IOCC, PRESET THE I/O AREA TO FFFF, SET THE WORD COUNT INTO THE I/O AREA AND ISSUE THE READ COMMAND THRU SUBROUTINE XEQ.

UPON RETURN FROM XEQ THE DSW IS CHECKED FOR ANY READ ERRORS.

WITH OR WITHOUT DSW ERRORS THIS ROUTINE WILL THEN CALL THE CMP SUBROUTINE, TO CHECK DATA READ.

IF ALL EIGHT TRIES FAIL THEN THE ROUTINE EXIT WOULD BE INDIRECTLY ON ERROR RETURN 1.

IF ANY READ TRY WAS SUCCESSFUL THE RETURN IS TO CALL+4.

BSI CMP
MDX ERROR RETURN

THIS ROUTINE WILL MAKE A WORD BY WORD COMPARISON OF THE DATA READ AGAINST THE DATA EXPECTED. THE ROUTINE WILL ALSO MAKE A CHECK OF THE WORD COUNTER BY COMPARING TO SEE IF MORE WORDS WERE TRANSFERRED THAN EXPECTED.

IF NO ERRORS ARE FOUND THE ROUTINE EXITS DIRECTLY TO CALL+2, OTHERWISE THE EXIT IS TO CALL+1.

BSI 2 WRITE-T8
DC NUMBER OF WORDS (IF BIT 0 = 1, DO NOT PRESET I/O AREA)
DC DATA TO BE PRESET IN I/O AREA
DC ERROR RETURN
(A REG. CONTAINS THE SECTOR NUMBER)

THIS ROUTINE WILL PRESET THE I/O AREA WITH DATA TO BE
WRITTEN. THE ROUTINE WILL THEN PLACE THE SECTOR 10 AT I/O
AREA PLUS 1 AND WORD COUNT AT I/O AREA. THE ROUTINE WILL BUILD
THE IOCC AND ISSUE THE WRITE COMMAND, THRU THE XEQ ROUTINE.
UPON RETURN FROM XEQ THE DSW IS CHECKED FOR ERRORS.
IF ANY ERRORS EXIST THE ROUTINE WILL RETRY TO A MAXIMUM OF
7 TIMES.
IF ALL 8 WRITE TRIES FAIL THE ROUTINE WILL EXIT INDIRECTLY
TO ERROR RETURN ADDRESS.
IF ANY WRITE TRY IS SUCCESSFUL THE ROUTINE WILL EXIT DIRECT-
LY TO CALL+4.

----- LAST PAGE -----

6 APPENDIX

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT.. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:

1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES: 1. AN "E" IN COLUMN 1. 2. THE PID FOR THIS PROGRAM (COL 2-3). 3. A TERMINATOR WORD OF "FFFF" (COL 7-10).

[illegible]

CARD 0 CONTAINS THE DDEF'S FOR THE 1810 FILES. REFER TO NOTE AT BOTTOM OF PAGE.

CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.

*** ADDRESSES NORMALLY USED. THESE ADDRESSES NEED NOT BE PUNCHED UNLESS AN ADDRESS IS BEING CHANGED. THEN, ALL ADDRESSES TO THE LEFT OF SAID CHANGE MUST BE PUNCHED. AND THE TOTAL NUMBER OF ALL ENTRIES INDICATED (COL. 15). SEE SEC. 2.2.1.B

IF SYSTEM HAS A1 OR A2 FILE. THE UNUSED DRIVE FIELDS MUST BE PUNCHED 0000 WHENEVER AN ADDRESS REFERENCE FIELD IS PUNCHED. (OTHERWISE LEAVE UNUSEDDRIVE FIELDS BLANK.) SEE SEC. 2.2.1.B

```
*****80900020
*
*      THIS PROGRAM USES A NEW CODING 80900030
*      CALLED EXTENDED MNEMONIC      80900040
*      CODING.                        80900050
*                                   80900060
*      THIS CODING IS SUMMARIZED HERE 80900070
*      FOR CONVENIENCE.               80900080
*                                   80900090
*                                   80900100
*****80900110
*
* EXTENDED      STANDARD      MEANING
* MNEMONIC      MNEMONIC      OF CODE
* CODING      EQUIVALENT
*-----+-----+-----+
* SKP  E      BSC  E      SKIP IF A IS
*                               PLUS. 80900160
*-----+-----+-----+
* SKP  E-     BSC  E-     SKIP IS A IS
*                               PLUS OR MINUS. 80900200
*-----+-----+-----+
* SKP  Z      BSC  Z      SKIP IF A IS
*                               ZERO. 80900230
*-----+-----+-----+
* SKP  O      BSC  O      SKIP IF OVERFLOW
*                               IS OFF. 80900260
*-----+-----+-----+
* SKP  C      BSC  C      SKIP IF CARRY IS
*                               OFF 80900290
*-----+-----+-----+
* SKP  E-C    BSC  E-C    SKIP IF A IS
*                               PLUS OR MINUS OR
*                               IF CARRY IS OFF. 80900340
*-----+-----+-----+
* B      EXIT  MDX  EXIT  BRANCH TO EXIT
*                               WHERE EXIT IS
*                               WITHIN NORMAL
*                               DISPLACEMENT. 80900390
*-----+-----+-----+
* B  L  ALPH  BSC L  ALPH  BRANCH TO ALPH. 80900410
*-----+-----+-----+
* BZ      BETA  BSC L  BETA,E- BRANCH TO BETA
*                               IF A IS ZERO. 80900440
*-----+-----+-----+
* BNZ     BETA  BSC L  BETA,Z  BRANCH TO BETA
*                               IF A IS NON-ZERO 80900470
*-----+-----+-----+
* BNZ I  BETA  BSC I  BETA,Z  BRANCH
*                               INDIRECTLY TO
*                               BETA IF A IS
*                               NON-ZERO. 80900520
*-----+-----+-----+
* BN      RTNA  BSC L  RTNA,ZE BRANCH TO RTNA
*                               IF A IS MINUS. 80900550
*-----+-----+-----+
* BNN     RTNB  BSC L  RTNB,-  BRANCH TO RTNB
*                               IF A IS
*                               NOT MINUS. 80900590
*-----+-----+-----+
* BP      SUBO  BSC L  SUBO,Z- BRANCH TO SUBO
*                               IF A IS PLUS. 80900620
*-----+-----+-----+
* BNP     SUB   BSC L  SUB,E   BRANCH TO SUB
*                               IF A IS NOT
*                               PLUS. 80900650
*-----+-----+-----+
* BC      ENTR  BSC L  ENTR,C  BRANCH TO ENTR
*                               IF CARRY IS ON. 80900680
*-----+-----+-----+
*                               80900690
```

```
*-----+-----+-----+80900700
* B0  2 5      BSC L2 5,0  BRANCH TO AORS. 80900710
*                               SPECIFIED BY 80900720
*                               CONTENTS OF IX. 80900730
*                               2 PLUS 5 IF 80900740
*                               OVERFLOW IS ON. 80900750
*-----+-----+-----+
* B0D  SAFE    BSC L  SAFE,E  BRANCH TO SAFE 80900760
*                               IF A IS 000. 80900770
*-----+-----+-----+
* MDM  AVA,5    MOX L  AVA,5  INCREMENT ADRS. 80900800
*                               AVA BY 5. 80900810
*-----+-----+-----+
* XCH      RTE  16  EXCHANGE THE 80900820
*                               CONTENTS OF A 80900830
*                               AND Q. 80900840
*-----+-----+-----+
*-----+-----+-----+80900860
*-----+-----+-----+80900870
*-----+-----+-----+80900880
*-----+-----+-----+80900890
*****80900900
*
* SUBROUTINE CALLS 80900920
* 80900930
* BNDEC 80900940
* A REG.=HEX NUMBER (0-9999 BASE 10) 80900950
* BSI BNDEC CONVERT HEX TO DECIMAL 80900960
* A REG.=CONVERTED DEC. NUMBER 80900970
* 80900980
* 80900990
* CKLK 80901000
* BSI 2 CKLK-TB CHECK BIT 12 SWD 80901010
* DC RETURN ADRS IF BIT 12 SET 80901020
* 80901030
* CMP 80901040
* BSI CMP COMPARE DATA WITH NUMBER 80901050
* MDX CMP ERR BRANCH 80901060
* 80901070
* COUNT 80901080
* IX1=POINTER FOR SUMMARY TABLE 80901090
* BSI 2 COUNT-TB INCR COUNT MODULO 10,000. 80901100
* 80901110
* PRSUM 80901120
* BSI 2 PRSUM-TB PRINT SUMMARY TABLE 80901130
* 80901140
* READ 80901150
* A REG.= SECTOR COUNT 80901160
* BSI 2 READ-TB READ SECTOR AT PRESENT 80901170
* * CYL. COMPARE DATA IF 80901180
* * NOCK ZERO. 80901190
* * 80901200
* DC NO.OF WORDS-BIT 0 EQUAL 1 MEANS USE 80901210
* * RANDOM NUMBERS FOR CMP 01211
* * -BIT 1 MEANS TO READ AND
* * RETURN WITHOUT CHECKING
* * THE DSW OR THE DATA
* * DC NUMBER USED IN COMPARE 80901220
* * DC ADRS OF CMP ERROR RETURN 80901230
* 80901240
* 80901290
* RNDOM 80901300
* A REG.= NO. USED TO BUILD NEXT RANDOM NO. 80901310
* BSI 2 RNDOM-TB GENERATE NO. 80901320
* A REG.= NEW RANDOM NO. 80901330
* 80901340
* SECT 80901350
* A REG.=SECTOR ID IN HEX 80901360
* BSI SECT CONVERT SID FOR PRINT 01370
* O0CC O0HS CC=CYL# IN DECIMAL 80901380
* * H = HEAD (0-1)
```

```
**          S = SECTOR (0-3)
*
* SETV
*   A REG.=NO.TO BE SET IN COMA AREA
*   COMA = WORD COUNT
*   BSI 2 SETV-TB   PRESET COMA+1 TO COMA+N+2
*                   TO VALUE IN A REG.
**
* STMLS
*   BSI 2 STMLS-TB  SAVE IX 1, IX 2 AND EXIT
*                   * MONITOR. RETURN IS TO
*                   * CALL+1.
**
* STMSG
*   BSI 2 STMSG-TB  PRINT MESSAGE
*                   DSW ERRORS.
*   DC    MESSAGE ID
**
* VERFY
*   BSI 2 VERFY-TB  SEEK A CYLINDER AND VER-
*                   * IFY CYL. BY READING AT
*                   * LEAST TWO SECTOR ID'S.
**
*   DC    CYL # DESIRED
*   DC    RETURN ADRS IF CYL # INVALID OR
*                   BAD FROM 2315 DISK INITIALIZER.
**
* WRITE
*   A REG.=SECTOR COUNT
*   BSI 2 WRITE-TB  WRITE IN PRESENT CYLINDER
*   DC    NO.OF WORDS TO BE WRITTEN
**
*                   IF BIT 0=1, DDNT PRESET
*                   THE I/O AREA
*                   IF BIT 1=1 DON'T CHECK DSW
*                   FOR ERRORS AFTER THE WRITE
**
*   DC    DATA TD BE WRITTEN
*   DC    ADRS DF DSW ERROR RETURN
**
* XEQ
*   BSI 2 XEQ-TB    EXECUTE I/O AND WAIT
*                   * FOR INTERRUPT
**
* ZRLDV
*   BSI 2 ZRLDV-TB  RELEASE DEVICE
**
* ZRQDV
*   BSI 2 ZRQDV-TB  REQUEST DEVICE
**
*****
*
* MONITOR INTERFACE
*
*****
*
* ORG    **2047
*
* EQUATE TABLES
*
* BEGIN EQU 300
* START EQU BEGIN+1
* END EQU START+1
* LOG EQU END+1
* ERROR EQU LOG+1
* REQDV EQU ERROR+1
* RELDV EQU REQDV+1
* CRCK EQU RELDV+1
* MATD EQU CRCK+1
*
```

07FF

012C 0
012D 0
012E 0
012F 0
0130 0
0131 0
0132 0
0133 0
0134 0

```
*
* MONITOR INTERFACE TABLES
*
* PID DC /0900 1810 A/B DFT
* RID DC 0 ROUTINE ID
* RAD DC 0 ROUTINE ADRS
* SWO DC 0 SWITCH FUNCTION 00
* SW1 DC 0 SWITCH FUNCTION 01
* SW2 DC 0 SWITCH FUNCTION 10
* SW3 DC 0 SWITCH FUNCTION 11
* IPA DC ZIPA INITIALIZATIDN ADRS
* LPA DC ZLPA LDDP PRDGRAM ADDRESS
* EPA DC ZEPA END PROGRAM ADDRESS
*
* MLSCF DC 0 MAIN LINE SEQUENCE
* DC 0 * CONTROL FIELD
* TERM DC /FFFF TERMINATOR
* DC PEND LAST PRDGRAM ADDRESS
* DC 0 WORDS FOR MONITOR
* DC 0 * USE
* DC 0 *
* ONLIN DC 0 NDN-ZERD MEANS DN-LINE
* CMPT DC 2 COMPATIBILITY SWITCH
*
*
* EDIT FIELD
*
* DDEF DC /FFFF DDEF ENTRY ONE
* DC /FFFF ENTRY TWO
* DC /FFFF ENTRY THREE
* CY000 DC /0000 CYL 0
* CY001 DC /0008 CYL 1
* CY002 DC /0010 CYL 2
* CY003 DC /0018 CYL 3
* CY199 DC /0638 CYL 199
* CY200 DC /0640 CYL 200
* CY201 DC /0648 CYL 201
* CY202 DC /0650 CYL 202
* RNDISK DC 0 PATCH OPTION-RANDDM SEEK
* RNDWR DC 0 PATCH OPTION RANDOM WRT
* BADCY DC -1
* DC -1
* DC -1
*
* BEGIN ROUTINE
*
* BEG BSI I BEGIN EXIT TO MONITOR
* DC PID ADRS DF PID
* *****
*
* INTERRUPT ROUTINE
*
* *****
* INTSW DC 0 INTERRUPT SWITCH
* DVA DC 0 AREA CODE STDRAGE
* INTR DC 0 INTRPT ENTRY
* LO INTSW GET INTRPT SWITCH
* LDX L3 INTRB SET RETURN IN CASE
* SKP +- SKIP IF EXPECT INTERRUPT
* STX 3 MLSCF ELSE SET IN RETURN ADDRESS
* SLA 16 CLEAR INTERRUPT SWITCH
* STO INTSW *
*
* XIO ZSNS SENSE DSW
* STO ZSNS STDR DSW IN TEMP LOC'N
* BSC I INTR EXIT ROUTINE
*
* PRINT ERROR - MAINLINE
*
* INTRB LD ZSNS GET INTRPT DSW
```

07FF 0 0900
0800 0 0000
0801 0 0000
0802 0 0000
0803 0 0000
0804 0 0000
0805 0 0000
0806 1 0A38
0807 1 0A6D
0808 1 0A7B

0809 0 0000
080A 0 0000
080B 0 FFFF
080C 1 0FFF
080D 0 0000
080E 0 0000
080F 0 0000
0810 0 0000
0811 0 0002

0812 0 FFFF
0813 0 FFFF
0814 0 FFFF
0815 0 0000
0816 0 0008
0817 0 0010
0818 0 0018
0819 0 0638
081A 0 0640
081B 0 0648
081C 0 0650
081D 0 0000
081E 0 0000
081F 0 FFFF
0820 0 FFFF
0821 0 FFFF

0822 2 4480 012C
0824 1 07FF

0825 0 0000
0826 0 0000
0827 0 0000
0828 0 C0FC
0829 1 6700 0833
082B 0 4818
082C 0 68DC
082D 0 1010
082E 0 D0F6

082F 0 0816
0830 0 D015
0831 1 4C80 0827

0833 0 C012

2310 A/B FUNCTION TEST

PAGE 3

0834 0 0018
0835 1 6600 087F
0837 0 4230
0838 0 0E02
0839 2 4C80 0120

STD TBDSW STDRE FOR PRINT
LDX L2 TB SET PDINTER TO TABLE
BSI 2 STMSG-TB PRINT ERROR MESSAGE
DC /0E02 MESSAGE IO
BSC 1 START BRANCH TO MONITOR

80902830
80902840
80902850
80902860
80902870
80902880

TABLE OF COMMON PROGRAM
CONSTANTS

80902890
80902900
80902910
80902920
80902930
80902940
80902950
02951

087F 2

TB EQU PID+128 PDINTER USED TO REACH
* * TABLE BY SHORT FORM
DDEFX DC *-* DDEF SELECTED BY SW FNC 2
XSKBK DC /0404 FNC/MOD-SEEK OUT
H3000 DC /3000 FORM NUMBER FOR PRSUM
H1313 DC /1313 CONSTANT HEX 1313
MASK DC /0123 ORDER OF SECTOR COUNTS
K259 DC 259 RANDOM GENER. MULTIPLIER
WRMDD DC /0500 WRITE FUNCTION
DSKMD DC /0600 READ FNC/MOD
RDCHK DC /0680 READ-CHECK IOCC
SNRES DC /0700 SENSE/RESET CONSTANT
H0080 DC /0080 MASK USED BY STMSG RTN

80902960
80902970
80902980
80902990
80903000
80903010
80903020
80903030
80903040
80903050
03060

BSS E 0
ZSNS DC *-* USED AS TEMP LOC'N
DC *-* SENSE-RESET IOCC
ZXID DC *-* COMMDN IOCC STDRAGE
DC *-* *
SNXID DC *-* IOCC-STDRAGE-SENSE
DC *-* *
HE5E5 DC /E5E5 CONSTANT HEX E5E5
MSGD DC *-* MESSAGE STORAGE
DC *-* HEX/DEC FLAG
MSGID DC *-* MESSAGE ID
TBDSW DC *-* DSW
FILE# DC *-* FILE NUMBER
MOD3 DC *-* MODIFIERS
MOD4 DC *-* *
MOD5 DC *-* *
MOD6 DC *-* *
MOD7 DC *-* *
BNTMP DC *-* TEMP STDRAGE
PCYL# DC *-* PRESENT CYLINDER
NCYL# DC *-* NEXT DESIRED CYLINDER
ERSK1 DC *-* SEEK RTN ERROR SW
CNTB DC *-* SEEK RTN-RETRY CTR B
RTRYA DC *-* RETRY CTRS
RTRYB DC *-* *
RDDSW DC *-* ERROR CTRS
RDCMP DC *-* *
K1 DC 1 CONSTANT 1
K2 DC 2 CONSTANT 2
K3 DC 3 CONSTANT 3
K4 DC 4 CONSTANT 4
K7 DC 7 CONSTANT 7
K8 DC 8 CONSTANT 8
K202 DC 202 CONSTANT 202
K203 DC 203 CONSTANT 203
K331 DC 331 CONSTANT
K10TH DC 10000 CONSTANT 10000 DEC
SUMRY EQU * SUMMARY TABLE ORIGIN
PRSW DC *-* IF NON ZERO-BYPASS PRT
PSSCT DC *-* PASS COUNT
SKCNT DC *-* NUMBER OF SEEKS
SFTSK DC *-* NUMBER SOFT SK ERRORS

80903070
80903080
80903090
80903100
80903110
80903120
80903130
80903140
80903150
03160
80903170
80903180
80903190
80903200
80903210
80903220
80903230
80903240
80903250
80903260
80903270
80903280
80903290
80903300
80903310
80903320
80903330
80903340
80903350
80903360
80903370
80903380
80903390
80903400
80903410
80903420
80903430
80903440
80903450
80903460
80903470
80903480

2310 A/B FUNCTION TEST

PAGE 3A

086E 0 0000
086F 0 0000
0870 0 0000
0871 0 0000
0872 0 0000
0873 0 0000
0874 0 0000
0875 0 0000
000C 0
0876 0 0000
0877 0 0000
0878 0 0000
0879 0 0000
087A 0 0000
087B 0 0000
087C 0 0000
087D 0 0000
087E 0 0000
087F 0 0000
0880 0 0000
0881 0 0000
0882 0 0000
0883 0 0000
0884 0 0000
0885 0 0000
0886 0 0000
0887 0 0000
0888 0 0000
0889 0 0000
088A 0 0000
088B 0 0000
088C 0 0000
088D 0 0000
088E 0 00A0
088F 0 00B0
0890 0 00A0
0891 0 0064
0892 0 03E8

HRDSK DC *-
RDCNT DC *-
SFTRD DC *-
HRDRD DC *-
WRCNT DC *-
SFTWR DC *-
HRDWR DC *-
WRLNG DC *-
SMLNG EQU *-SUMRY
FRNSK DC *-
PRNSK DC *-
FRN1 DC *-
LRN1 DC *-
FRN2 DC *-
LRN2 DC *-
CNTA DC *-
RNDCK DC *-
NOCK DC *-
LNGTH DC *-
INDEX DC *-
ERCT DC *-
DC *-
S#B DC *-
DC *-
IDS#B DC *-
LPRNT DC *-
ZCNT DC *-
RTCNT DC *-
WRRTY DC *-
WRERR DC *-
RTNER DC *-
CMPTM DC *-
MODEL DC *-
H00A0 DC /00A0
H00B0 DC /00B0
TEN DC 10
HUNDR DC 100
THOUS DC 1000

NUMBER HARD SK ERRORS 80903490
NUMBER OF READS 80903500
NUMBER SOFT RD ERRORS 80903510
NUMBER HARD RD ERRORS 80903520
NUMBER OF WRITES 80903530
NUMBER SOFT WR ERRORS 80903540
NUMBER HARD WR ERRORS 80903550
AVG SECT LNGTH/WRT 400 80903560
LENGTH OF SUMMARY TABLE 80903570
FIRST RANDDM SK ISSUED 80903580
LAST RANDDM SK ISSUED(FXD) 80903590
FIRST RANDDM # RTN 9 80903600
LAST RANDDM # RTN 9(FXD) 80903610
FIRST RANDDM # RTN 10 80903620
LAST RANDDM # RTN 10(FXD) 80903630
SEEK RTN-RETRY CTR 80903640
TEMP STORAGE 80903650
BYPASS RD CKS IF NON 0 80903660
RECORD LENGTH STORAGE 80903670
INDEX POINTER 80903680
CMP RTN ERRDR CTR 80903690
TEMP STORAGE-CMP RTN EVEN 80903700
* 80903710
* 80903720
PRESENT SECT/CYL ID 000 80903730
LAST WORD PRINTED 80903740
DELAY COUNT 80903750
RETRY COUNTER 80903760
RETRY COUNTER 80903770
ERROR SWITCH 80903780
RTN ERRDR COUNTER 80903790
TEMP STORAGE 80903800
NDN ZERO FOR FAST ACCESS 03810
MODEL A 80903820
MODEL B -FAST ACCESS 03830
CONSTANTS USED TO CONVERT
* HEX TO DECIMAL
* *

0893 1 0814
0894 1 08C4
0895 0 FFF3
0896 1 0A68
0897 0 0000
0898 1 4C00 0F12

*
ADDEF DC DDEF+2
ADCA DC COMA
ADDIF DC ZIPB-ZIPD
ADZIP DC ZIPD
CKLK DC *-
BSC L CKLKE

80903840
80903850
80903860
80903870
80903880
80903890
80903900
80903910
80903920
80903930

089A 0 0000
089B 1 4C00 0F20

*
CKPRT DC *-
BSC L CKPRE

CHECK PRINT-ALL-ERRORS DPT 80903940
ENTRY POINT 80903950

089D 0 0000
089E 1 4C00 0AE1

*
CNTLE DC *-
BSC L CNTL

BRANCH TO CONTROL 80903960
* ROUTINE 80903970

08A0 0 0000
08A1 1 4C00 0F64

*
CDUNT DC *-
BSC L CDUNE

ENTRY TO INCR SUMMARY 80903980
* COUNT RTN 80903990

08A3 0 0000
08A4 1 4C00 0DD3

*
READ DC *-
BSC L RDN

ENTRY TO DISK READ 80904000
* RTN 80904010
80904020

08A6 0 0000
08A7 1 4C00 0F09

*
RNDOM DC *-
BSC L RNDME

ENTRY TO GENERATE 80904030
* RANDOM NUMBER RTN 80904040
80904050

08A9 0 0000
08AA 1 4C00 0F2A

*
SETV DC *-
BSC L SETVE

ENTRY TO SET I/O AREA 80904060
* RTN 80904070
80904080
80904090

08AC 0 0000
08AD 1 4C00 0CF7

*
STMLS DC *-
BSC L STMLE

ENTRY TO SAVE INDEXING 80904100
* AND EXIT TO MONITOR 80904110
80904120

08AF 0 0000

*
STMSG DC *-

ENTRY TO SET UP AND 80904130

2310 A/B FUNCTION TEST

```
08B0 1 4C00 0F6D      BSC L STMSE      * PRINT A MESSAGE      80904140
*
08B2 0 0000      TEXTIT OC      **      ENTRY OF CALL      80904150
08B3 1 4C00 0F33      BSC L OFTXT      TO TERMINATE OFT      80904160
*
08B5 0 0000      VERFY OC      **      ENTRY TO SEEK A CYL AND      80904170
08B6 1 4C00 0003      BSC L VRFYE      * VERIFY THE SEEK      80904180
*
08B8 0 0000      WRITE OC      **      ENTRY TO WRITE DATA      80904190
08B9 1 4C00 0EC0      BSC L WRTEN      * ON THE DISK      80904200
*
08BB 0 0000      XEQ OC      **      ENTRY TO EXECUTE AN      80904210
08BC 1 4C00 0CB9      BSC L XEQE      * XIO INSTRUCTION      80904220
*
08BE 0 0000      ZRLOV OC      **      ENTRY TO RELEASE      80904230
08BF 1 4C00 0CEE      BSC L RLOVE      * A DEVICE      80904240
*
08C1 0 0000      ZRQOV OC      **      ENTRY TO REQUEST      80904250
08C2 1 4C00 0CAC      BSC L RQOV      * A DEVICE      80904260
*
*****
*
08C4 0 0174      COMA BSS E 372      THIS SETS BOCYL EVEN IF      80904270
0A38 0      ENOCM EQU      * BSS NUMBER IS EVEN      80904280
*
*****
*
0A38 0 0000      ZIPA OC 0      ENTRY POINT      80904290
0A39 0 4033      BSI ZLPA      CLEAR SAME THINGS AS LOOP      80904300
*
*
*      CLEAR SUMMARY TABLE      80904310
*
0A3A 0 630C      LOX 3 SMLNG      LENGTH OF SUMMARY TABLE      80904320
0A3B 1 0700 0869      STO L3 SUMRY-1      CLEAR SUMMARY TABLE      80904330
0A30 0 73FF      MOX 3 -1      OECR POINTER      80904340
0A3E 0 70FC      B ZIPL      LOOP      80904350
*
*
0A3F 0 C283      LO 2 SWO-TB      CLEAR TERMINATE OFT BIT      80904360
0A40 0 1801      SRA 1      CLEAR BIT 15      80904370
0A41 0 1001      SLA 1      *      80904380
0A42 0 0283      STO 2 SWO-TB      PUT BACK IN SWO      80904390
0A43 0 C285      LO 2 SW2-TB      GET SW FNC 10      80904400
0A44 0 0201      STO 2 TBOSW-TB      IN CASE PRINT      80904410
0A45 0 6302      LOX 3 2      INITIAL VALUE      80904420
0A46 0 4820      SKP Z      SKIP IF NO BITS SET      80904430
0A47 0 1340      SLCA 3 0      ELSE SHIFT LEFT AND COUNT      80904440
0A48 0 1001      SLA 1      GET RIO OF SIGN BIT      80904450
0A49 0 4820      SKP Z      SKIP IF ZERO      80904460
0A4A 0 6302      LOX 3 2      ELSE USE INITIAL VALUE      80904470
0A4B 0 6B21      STX 3 ZLPA      TEMP STORAGE      80904480
0A4C 0 C214      LO 2 ADOEF-TB      AORS OF ODEF+2      80904490
0A40 0 901F      S ZLPA      CREATE ODEF ENTRY      80904500
0A4E 0 028C      STO 2 ODEFX-TB      TEMPORARY      80904510
0A4F 1 C480 083B      LO 1 ODEFX      PICK UP ODEF ENTRY      80904520
0A51 0 D28C      STO 2 ODEFX-TB      STORE FOR REQ/REL ROUTINES      80904530
0A52 0 0202      STO 2 FILE#-TB      IN CASE PRINT      80904540
0A53 0 82E1      A 2 K1-TB      TEST FOR /FFFF      80904550
0A54 0 4820      SKP Z      SKIP IF VALID E0IT      80904560
0A55 0 C216      LO 2 A00IF-TB      POINT TO ZIPO      80904570
0A56 0 8217      A 2 A0ZIP-TB      IF SKIP-POINT TO ZIPB      80904580
0A57 0 028B      STO 2 MLSCF+1-TB      SET MLSCF ENTRY FOR RETURN      80904590
```

2310 A/B FUNCTION TEST

```
0A58 0 0282      STO 2 RA0-TB      SET RTN ADDRESS      80904810
0A59 1 4C80 0A38      BSC 1 ZIPA      EXIT INITIALIZATION      80904820
*
*
*      REQUEST/RELEASE DEVICE TO      80904830
*      GET AREA CODE IN OVA      80904840
*
0A5B 1 6600 087F      ZIPB LOX L2 TB      SET UP TABLE POINTER      0A850
0A50 0 4242      BSI 2 ZRQOV-TB      REQUEST DEVICE      80904860
0A5E 0 423F      BSI 2 ZRLOV-TB      RELEASE      80904870
*
*
*      CREATE IOCC'S FOR SENSE OSW      80904880
*
0A5F 0 C2A7      LO 2 OVA-TB      GET DEVICE AREA CODE      80904890
0A60 0 EAC5      OR 2 SNRES-TB      SENSE OSW IOCC      80904900
0A61 0 02CC      STO 2 SNXIO+1-TB      *      80904910
0A62 0 EAE1      OR 2 K1-TB      SENSE-RESET OSW      80904920
0A63 0 D2C8      STO 2 ZSNS+1-TB      * FOR INTERRUPT RTN      80904930
*
*
*      AREA CODE = 4 8 9      80904940
*      OVA = 2000 4000 4800      80904950
*      A REGISTER= 2701 4701 4F01      80904960
*      ZIPC = 1880 1880 1880      80904970
*      SUM TOTAL = 3E8E 5E8E 678E      80904980
*      13 = 0001 0002 0003      80904990
*
0A64 0 8000      A ZIPC SRT      80905000
0A65 0 1880      *      80905010
*
0A66 0 0202      STO 2 FILE#-TB      SET FILE NUMBER      80905020
0A67 0 7021      MOX PRECN      GO TO PRE-CONTROL RTN      80905030
*
0A68 1 6600 087F      ZIPO LOX L2 TB      GET TABLE AORS TO IX2      80905080
0A6A 0 4230      BSI 2 STMSG-TB      PRINT MESSAGE      80905090
0A6B 0 5C00      OC /5C00      FORM NUMBER/MIO      80905100
0A6C 0 4233      BSI 2 TEXTIT-TB      TERMINATE OFT      80905110
*****
*
*      LOOP PROGRAM ENTRY      80905120
*
0A60 0 0000      ZLPA OC 0      ENTRY POINT      80905130
0A6E 1 6600 087F      LOX L2 TB      INDEX EQUAL AORS COMMON TB      80905140
0A70 0 C283      LO 2 SWO-TB      GET FNC SW 00      80905150
0A71 1 4C04 0A76      BOO ZLPB      BRANCH # BIT 15 SET      80905160
0A73 0 C220      LO 2 CNTLE+2-TB      SET AORS CONTROL ROUTINE      80905170
0A74 0 028B      STO 2 MLSCF+1-TB      SET IN MLSCF      80905180
0A75 0 0282      STO 2 RAD-TB      SET FOR MESSAGES AND ERROR      80905190
*
*
0A76 0 1010      ZLPB SLA 16      CLEAR A REG      80905200
0A77 0 0281      STO 2 RIO-TB      CLEAR RIO      80905210
0A78 0 02EB      STO 2 PRSW-TB      CLEAR NO-PRINT SWITCH      80905220
0A79 1 4C80 0A60      BSC 1 ZLPA      EXIT      80905230
*****
*
*      ENO PROGRAM ROUTINE      80905240
*
0A7B 0 0000      ZEPA OC 0      ENTRY POINT      80905250
0A7C 1 6600 087F      LOX L2 TB      IX=TABLE AORS      80905260
0A7E 1 2C40 08C5      STS L COMA+1,/40      CLEAR STORAGE PROTECT BIT      80905270
*
*
0A80 0 6300      LOX 3 0      SET DELAY COUNTER      80905280
0A81 0 7301      MOX 3 +1      AOV DELAY      80905290
0A82 0 70FE      MOX *-2      LOOP UNTIL ZERO      80905300
*
*
0A83 0 423F      BSI 2 ZRLOV-TB      RELEASE DEVICE      80905310
0A84 0 1010      SLA 16      CLEAR A REG.      80905320
0A85 0 D2A6      STO 2 INTSW-TB      CLEAR INT SWITCH      80905330
0A86 1 4C80 0A7B      B 1 ZEPA      EXIT TO MONITOR      80905340
*****
*
*
*      80905350
*      80905360
*      80905370
*      80905380
*      80905390
*      80905400
*      80905410
*      80905420
*      80905430
*      80905440
```


2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 6OAF0 0 4230
OAF0 0 5C02
OAF0 0 4233BSI 2 STMSG-TB ELSE PRINT MESSAGE
DC /5C02 FORM NUMBER/MIO
BSI 2 TEXTIT-TB TERMINATE OFT80906810
80906820
80906830
80906840
80906850
80906860

ROUTINE ADDRESS TABLE

RTTBL DC LRTN-RTTBL LENGTH OF RTN AORS TABLE
DC RTN1 ADDRESS OF TEST ROUTINE 1
DC RTN2 2
DC RTN3 3
DC RTN4 4
DC RTN5 5
DC RTN6 6
DC RTN7 7
DC RTN8 8
DC RTN9 9
DC RTN10 10
DC RTN11 11
DC RTN12 12
DC RTN13 13
DC RTN14 1480906870
80906880
80906890
80906900
80906910
80906920
80906930
80906940
80906950
80906960
80906970
80906980
80906990
80907000
80907010

LRTN EQU * ENO OF RTN TABLE

80907020

80907030

80907040

80907050

80907060

80907070

80907080

80907090

80907100

80907110

80907120

80907130

80907140

80907150

80907160

80907170

80907180

80907190

80907200

80907210

80907220

80907230

80907240

80907250

80907260

80907270

80907280

80907290

80907300

80907310

80907320

80907330

80907340

80907350

80907360

80907370

80907380

80907390

80907400

80907410

80907420

80907430

80907440

80907450

80907460

80907470

INVALID AORS BIT NOT ON

ERR1 BSI 2 STMSG-TB PRINT ERROR
DC /5E1B MSG IO80907370
80907380
80907390RTN1G LD 2 ONLIN-TB GET ON-LINE SWITCH
BNZ RTN10 BRANCH IF ON LINE NOW
LD 2 K1-TB IOCC MODIFIER
OR 2 DVA-TB *
STD 2 ZXIO+1-TB *
XIO 2 ZXIO-TB ISSUE CE MODE80907400
80907410
80907420
80907430
80907440
80907450
80907460
80907470OBF0 0 C20E
OBF0 0 4820
OB10 0 C28C
OB11 0 F201
OB12 0 1000
OB13 1 4C10 OB17
OB15 0 4230
OB16 0 5E14
OB17 0 C20E
OB18 1 4C18 OB27
OB1A 0 C280
OB1B 0 1890
OB1C 0 D245
OB1D 0 C2E8
OB1E 0 OAC9
OB1F 0 423COB20 1 4C10 OB25
OB22 0 100A
OB23 1 4C28 OB27OB25 0 4230
OB26 0 5E1BOB27 0 C291
OB28 1 4C20 OB3A
OB2A 0 C2E1
OB2B 0 EAA7
OB2C 0 02CA
OB2D 0 OAC9

2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 6AOB2E 0 OACB
OB2F 0 D201
OB30 0 C2A7
OB31 0 02CA
OB32 0 OAC9
OB33 0 C201XIO 2 SNXIO-TB SENSE OSW
STO 2 TBOSW-TB STORE IN CASE PRINT
LO 2 OVA-TB SET OUT OF CE MODE IOCC
STO 2 ZXIO+1-TB *
XIO 2 ZXIO-TB ISSUE XIO
LO 2 TBOSW-TB GET SAVED OSW80907480
80907490
80907500
80907510
80907520
80907530

CE NOT ROY/BUSY BITS SHOULO NOT BE ON

80907540
80907550OB34 0 1803
OB35 0 E2E3
OB36 1 4C18 OB3A
OB38 0 4230
OB39 0 5E1CSRA 3 CHECK BITS 11-12
ANO 2 K3-TB TEST THE BITS FOR ZERO
BZ RTN10 BRANCH IF OK
BSI 2 STMSG-TB PRINT ERROR
OC /5E1C MSG IO80907560
80907570
80907580
80907590
80907600
80907610OB3A 0 71FF
OB3B 0 7002
OB3C 0 421ERTN10 MOX 1 -1 OECR RTN LOOP CNTR
B RTN1 LOOP RTN
BSI 2 CNTLE-TB EXIT RTN80907620
80907630
80907640
80907650

TEST ROUTINE TWO

THIS ROUTINE REAOS ONE WORD INTO A STORAGE
PROTECTED WORD AND CHECKS THE OSW FOR S. P. V
BEING ON. THE PROTECTED WORD IS THEN
CHECKED TO BE SURE NO DATA WAS REAO INTO IT.80907660
80907670
80907680
80907690
80907700
80907710
80907720
80907730
80907740
80907750
80907760
80907770OB30 0 C291
OB3E 1 4C20 OAE1
OB40 0 C28C
OB41 0 D246
OB42 1 2C41 OB45RTN2 LO 2 ONLIN-TB GET ON-LINE SWITCH
BNZ CNTL EXIT RTN IF PRG ON-LINE
RTN2L LO 2 TERM-TB SET WORD TO FOXES
STO 2 COMA+1-TB *
STS L COMA+1,/41 SET STO PROTECT BIT80907760
80907770
80907780
80907790
80907800
80907810
80907820OB44 0 1010
OB45 0 4224
OB46 0 4001
OB47 1 2C40 OB45SLA 16 SECTOR ZERO
BSI 2 REAO-TB CALL REAO RTN
OC 1+/4000 ONE WORD-NO OSW CHECK
STS L COMA&1,/40 CLEAR STORAGE PROTECT80907830
80907840
80907850
80907860
80907870OB49 0 CAC7
OB4A 1 4C30 OB4F
OB4C 0 1086
OB4D 1 4C28 OB51LOO 2 ZSNS-TB GET INTRPT OSW
BP RTN20 BR IF 'ANY ERROR' INO NOT
SLT 6 TEST SPV
BN RTN2A BR IF NO SPV INO. IN OSW80907880
80907890
80907900
80907910
80907920OB4F 0 4230
OB50 0 5E1DRTN20 BSI 2 STMSG-TB NO SPV INO. IN OSW
OC /5E1D MESSAGE IO80907930
80907940
80907950OB51 0 C246
OB52 0 0203
OB53 0 F28C
OB54 1 4C18 OB59
OB56 0 4230
OB57 0 9E1E
OB58 0 421ERTN2A LO 2 COMA+1-TB TEST COMA+1 FOR FOXES
STO 2 M003-TB IN CASE PRINT
EOR 2 TERM-TB *
BZ RTN2B BR IF OK
BSI 2 STMSG-TB CPU ERROR
OC /9E1E MESSAGE IO
BSI 2 CNTLE-TB TERMINATE ROUTINE80907960
80907970
80907980
80907990
80908000
80908010
80908020
80908030OB59 0 71FF
OB5A 0 70E5
OB5B 0 421ERTN2B MOX 1 -1 OECR RTN LOOP CNT
B RTN2L LOOP
BSI 2 CNTLE-TB END OF ROUTINE80908040
80908050
80908060
80908070

TEST ROUTINE THREE

THIS ROUTINE WILL SEEK 2 IN ANO 1 OUT FROM
CYLINDER ZERO TO CYLINDER 202 EXCEPT
CYLINDERS 90-110. THE ROUTINE WILL THEN80908080
80908090
80908100
80908110
80908120
80908130
80908140
80908150

```
* SEEK 2 OUT AND 1 IN FROM CYLINDER 202 TO
* CYLINDER ZERO. EACH SEEK IS VERIFIED FOR
* PROPER CYLINDER REACHED.
*****
OB5C 0 63FF RTN3 LDX 3 -1 DECR SEEKS BY ONE 80908160
OB5D 0 6B1F STX 3 INCR1 * 80908170
OB5E 0 6302 LDX 3 2 INCR SEEKS BY TWO 80908180
OB5F 0 6B1E STX 3 INCR2 * 80908190
OB60 0 C2E1 LD 2 K1-TB FIRST CYL. WILL BE HOME 80908200
OB61 0 4007 BSI RTN3P EXECUTE SUCCESSIVE SEEKS 80908210
*
OB62 0 63FE LDX 3 -2 DECR SEEKS BY TWO 80908220
OB63 0 6B19 STX 3 INCR1 * 80908230
OB64 0 6301 LDX 3 1 INCR SEEKS BY ONE 80908240
OB65 0 6B18 STX 3 INCR2 * 80908250
OB66 0 C2E8 LD 2 K203-TB INI. CYL. + 1 80908260
OB67 0 4001 BSI RTN3P EXECUTE SUCCESSIVE SEEKS 80908270
OB68 0 421E BSI 2 CNTLE-TB EXIT ROUTINE 80908280
*
OB69 0 0000 RTN3P DC *-* ENTRY POINT 80908290
OB6A 0 D00C STO RTN3T STOR FOR CALL 80908300
OB6B 0 6500 00CA LDX L1 202 NO. IF SEEKS 80908310
*
OB6D 0 C009 RTN3Q LD RTN3T GET CYL. NO. 80908320
OB6E 0 800E A INCR1 INCR OR DECR 80908330
OB6F 0 D001 STO RTN3R STORE FOR SEEK 80908340
OB70 0 4236 BSI 2 VERFY-TB SEEK CYL. AND VERIFY 80908350
OB71 0 0000 RTN3R DC *-* CYLINDER NO. 80908360
OB72 1 0B73 DC RTN3S ADRS ERROR RETURN 80908370
OB73 0 C0FD RTN3S LD RTN3R GET LAST CYL. NO. 80908380
OB74 0 8009 A INCR2 INCR OR DECR 80908390
OB75 0 D001 STO RTN3T STORE FOR SEEK 80908400
OB76 0 4236 BSI 2 VERFY-TB CALL VERFY ROUTINE 80908410
OB77 0 0000 RTN3T DC *-* CYLINDER DESIRED 80908420
OB78 1 0B79 DC RTN3U INVALID ADRS RETURN 80908430
OB79 0 71FF RTN3U MDX 1 -1 DECR COUNTER 80908440
OB7A 0 70F2 B RTN3Q NOT FINISHED 80908450
OB7B 1 4C80 0B69 B 1 RTN3P RETURN 80908460
*
OB7D 0 0000 INCR1 DC 0 80908470
OB7E 0 0000 INCR2 DC 0 80908480
*****
* TEST ROUTINE FOUR
*
* THIS ROUTINE WILL ISSUE AND VERFY 100 RANDOM
* SEEKS. CYLINDERS 90-110 WILL NEVER BE
* ATTEMPTED.
*****
OB7F 0 7132 RTN4 MDX 1 100-LPCNT 100 LOOPS 80908490
OB80 0 C29E LD 2 RNDK-TB GET RNDM SEEK SWITCH 80908500
OB81 0 4818 SKP +- USE AS FIRST IF NOT ZERO 80908510
OB82 0 C2F8 LD 2 PRNSK-TB ELSE USE LAST GENERATED 80908520
OB83 0 D2F7 STO 2 FRNSK-TB FIRST RANDOM NUMBER 80908530
OB84 0 7002 B RTN4B * 80908540
*
OB85 0 C2F8 RTN4A LD 2 PRNSK-TB GET LAST RNDM NUMBER 80908550
OB86 0 4227 BSI 2 RNDM-TB GENERATE NEXT 80908560
*
OB87 0 D2F8 RTN4B STO 2 PRNSK-TB SAVE 80908570
OB88 0 1808 SRA 8 * FROM 0-202 80908580
OB89 0 D001 STO RTN4C STORE FOR SEEK 80908590
*
OB8A 0 4236 BSI 2 VERFY-TB SEEK AND VERIFY CYL. 80908600
```

```
OB8B 0 0000 RTN4C DC *-* CYL. DESIRED 80908840
OB8C 1 0B85 DC RTN4A IF INVALID, DON'T COUNT 80908850
OB8D 0 71FF MDX 1 -1 ELSE COUNT 80908860
OB8E 0 70F6 B RTN4A LOOP 80908870
OB8F 0 421E BSI 2 CNTLE-TB END OF RTN 80908880
*
* -----
* -----
*****
* TEST ROUTINE 5-READ AND
* CK 320 WORDS OF HEX 1313
* FROM CYL 1-SECT 0
*****
OB90 0 6301 RTN5 LDX 3 1 IX EQUAL CYL 80908890
OB91 0 6100 LDX 1 0 IX EQUAL WRITE SW 80908900
OB92 0 C2BF CMN2 LD 2 H1313-TB GET DATA EXPECTED 80909000
OB93 0 6200 LDX 2 0 IX EQUAL SECTOR 80909020
OB94 0 69F6 CMN1 STX 1 RTN4C SET RTN VALUES 80909030
OB95 0 6A7E STX 2 SECTD * 80909040
OB96 0 6600 0141 LDX L2 321 IX EQUAL WD CT 80909050
OB97 0 6132 LDX 1 LPCNT IX EQUAL LOOP CTR 80909060
OB98 0 700F B CMRT2 BRANCH TO COMMON RTN 80909070
*****
* TEST ROUTINE 6-READ AND
* CHECK 320 WORDS OF HEX E5E5
* FROM CYL 201-SECT 6
*****
OB9A 0 6700 00C9 RTN6 LDX L3 201 IX EQUAL CYL 80909100
OB9B 0 6100 LDX 1 0 IX EQUAL WRT SW 80909150
OB9C 0 C2CD CMN3 LD 2 HE5E5-TB GET DATA EXPECTED 80909160
OB9D 0 6206 LDX 2 6 IX EQUAL SECTOR 80909170
OB9E 0 70F4 MDX CMN1 BRANCH TO COMPLETE SETUP 80909180
*****
* TEST ROUTINE THIRTEEN-
* WRITE AND READ 320 WORDS
* OF HEX 1313 ON CYL 2-SECT
* 0-CHECK DATA READ
*****
OB9A 0 6302 RTN13 LDX 3 2 IX EQUAL CYL 80909200
OB9B 0 70F0 B CMN2 BRANCH TO COMPLETE SETUP 80909210
*****
* TEST ROUTINE FOURTEEN-
* WRITE AND READ 320 WORDS
* OF HEX E5E5 ON CYL 202-
* SECTOR 6-CHECK DATA READ
*****
OB9A 0 6700 00CA RTN14 LDX L3 202 IX EQUAL CYL 80909220
OB9B 0 70F8 B CMN3 BRANCH TO COMPLETE SETUP 80909230
*****
* TEST ROUTINE SEVEN-READ
* ZERO WORDS
*****
OB9A 0 6301 RTN7 LDX 3 1 SET CYL TO USE 80909240
OB9B 0 6200 LDX 2 0 SET WORD COUNT 80909250
OB9C 0 6AE3 STX 2 RTN4C CLEAR WRITE SW 80909260
OB9D 0 6A6B STX 2 SECTD SET SECTOR 80909270
*****
* -----
* -----
*****
```

2310 A/B FUNCTION TEST

```
*
*          THIS ROUTINE IS COMMON TO
*          TEST ROUTINES 5, 6, 7, 13 AND 14
*
OBA9 0 6807
OBA0 0 6A0F
OBA0 0 6A13
OBA0 0 000E
OBA0 0 D012
OBAE 1 6600 087F
OBB0 0 4236
OBB1 0 0000
OBB2 1 0AE1
OBB3 0 C28C
OBB4 0 D246
OBB5 0 C005
OBB6 1 4C18 08BD
OBB8 0 C05B
OBB9 0 4239
OBBA 0 0000
OBBB 0 0000
OBBB 1 08B0
OBBD 0 C056
OBBE 0 4224
OBBF 0 0000
OBC0 0 0000
OBC1 1 0BC8
OBC2 0 C20C

OBC3 0 4218
OBC4 1 08B3
OBC5 0 71FF
OBC6 0 70EC
OBC7 0 421E

OBC8 0 D20C
OBC9 0 4218
OBCA 1 08B3
OBCB 0 421E

OBCD 0 4236
OBCD 0 0001
OBCD 1 0AE1
OBCF 0 10A0
OBD0 0 DADB

OBD1 0 C2DA
OBD2 0 1003
OBD3 0 D246
OBD4 0 C2C4
OBD5 0 4224
OBD6 0 0141
OBD7 0 FFFF
OBD8 1 0BEF
OBD9 0 C2C7
OBD9 1 4C10 0BE3
OBD9 1 7401 085A
OBD9 0 421B

CMRT2 STX 3 CYL      SET CYLINDER TO USE
      STX 2 WDCTA     SET WORD COUNT
      STX 2 CMRTC     SET IN READ CALL
      STO OATA1       SET OATA EXPECTED
      STO OATA2       SET DATA EXPECTED
      LDX L2 TB       INDEX EQUAL TBL ADRS
      BSI 2 VERFY-TB   SEEK DESIRED CYL AND
CYL   OC   *-#        * VERIFY THE SEEK
      OC   CNTL        EXIT ON ERROR
CMRTL LD 2 TERM-TB    SET DATA EXPECTED
      STO 2 COMA+1-TB SET FDR COMPARE RTN
      LO  RTN4C        IS ROUTINE TO WRITE
      BZ  CMRTB        BRANCH TO REAO ONLY
      LO  SECTD        GET SECTOR DESIRED
      BSI 2 WRITE-TB   GO WRITE OATA
WDCTA DC   *-#        WDRO COUNT
DATA1 OC   *-#        DATA EXPECTED
      OC   CMRTB        EXIT ON ERROR
CMRTB LD 2 SECTO      GET SECTDR TO READ
      BSI 2 READ-TB    GO REAO OATA
CMRTC OC   *-#        WDRO COUNT
OATA2 OC   *-#        DATA EXPECTED
      DC   CMRTF        CMP ERROR-CONTINUE
      LO 2 RTNER-TB    GET ERROR COUNT

*
      BSI 2 CKLK-TB    CK LDCK-ON ERRDR
      DC   CMRTL        LODP IF SET
      MDX 1 -1         OECD LOOP RTN CNT
      MOX CMRTL        LOOP ROUTINE
      BSI 2 CNTLE-TB   EXIT ROUTINE

*
CMRTF STO 2 RTNER-TB  SET ERROR SWITCH
      BSI 2 CKLK-TB   CHECK LOCK-ON-ERROR
      DC   CMRTL        IF DN
      BSI 2 CNTLE-TB  TERMINATE ROUTINE
*****
*
*          TEST ROUTINE EIGHT-
*          READ CYL 1-SECT 0 USING
*          READ CK-CK FOR ANY DSW
*          ERRDRS AND CK THAT ND
*          DATA IS TRANSFERRED TO
*          MEMORY.
*****
RTN8  BSI 2 VERFY-TB   SEEK CYL 1 - VERIFY
      DC   1          * THE SEEK
      DC   CNTL        EXIT IF ERROR
      SLT 32          CLEAR AQ
      STD 2 ERSK1-TB   CLEAR ERRDR COUNTERS

*
RTN8L LD 2 NCYL#-TB   GET CYL. SOUGHT
      SLA 3          CREATE PROPER SECTOR ID
      STO 2 COMA+1-TB SET IN I/O AREA
      LD 2 ROCHK-TB   SET REAO CK MODIFIER
      BSI 2 REAO-TB   READ ROUTINE
      DC 321         321 WORDS
      DC /FFFF        DATA EXPECTED
      DC RTN8J        CMP ERROR RETURN
      LD 2 ZSNS-TB    GET INTRPT DSW
      BNN RTN8A       BRANCH ON ERROR
      MOX L ERSK1,1   INCR ERROR CNT
RTN8M BSI 2 CKPRT-TB  CK PRINT-ALL OPTION
```

2310 A/B FUNCTION TEST

```
OBF0 0 7001
OBE0 0 7002
OBE1 0 C2E1
OBE2 0 02EB

OBE3 0 71FF
OBE4 0 70EC
OBE5 0 1010
OBE6 0 D2EB
OBE7 0 CADB
OBE8 0 0A03
OBE9 0 820C
OBEA 1 4C18 0AE1
OBE0 0 4230
OBE0 0 3E1A
OBE0 0 421E

OBEF 1 7401 085B
OBF1 0 70EC

OBF2 0 4236
OBF3 0 0002
OBF4 1 0AE1
OBF5 0 6300
OBF6 0 C2FA
OBF7 0 7005

OBF8 0 4236
OBF9 0 00CA
OBF9 1 0AE1
OBF9 0 C2FC
OBF9 0 6306

OBF0 0 6B16
OBF0 0 4820
OBF0 0 D02F
OC00 0 C29F
OC01 0 4818
OC02 0 C02C
OC03 0 D02C
OC04 0 C29F
OC05 0 4820
OC06 0 D028

OC07 0 6700 FECD
OC09 0 C025
OC0A 0 D00E

OC0B 1 D700 0A06
OC0D 0 4227

B
RTN8N LD 2 K1-TB
STO 2 PRSW-TB

*
RTN8A MDX 1 -1
      MDX RTN8L
      SLA 16
      STO 2 PRSW-TB
      LDD 2 ERSK1-TB
      STD 2 MOD3-TB
      A 2 CNTB-TB
      BZ CNTL
      BSI 2 STMSG-TB
      OC /3E1A
      BSI 2 CNTLE-TB

OPTION NOT SET
OPTION SET
SET PRINT SW NDN-ZERD

OECD RTN LODP COUNT
LODP
CLEAR A REG.
CLEAR PRINT SWITCH
GET ERRDR CNTS
STORE IN CASE PRINT
ADO ERROR CNTB
EXIT ROUTINE IF ZERD
PRINT MESSAGE
MIO/FORM NUMBER
EXIT ROUTINE

RTN8J MDX L CNTB,1
      MDX RTN8M
      LDOP
*****
*
*          ROUTINE NINE-WRITE 320
*          RANDMM WDROS-READ AND CK-
*          ON CYL 2-SECT 0.
*****
RTN9  BSI 2 VERFY-TB   SEEK CYL 2-VERIFY
      DC   2          * THE SEEK
      DC   CNTL        TERMINATE DN ERRDR
      LDX 3 0          IX EQUAL SECTDR 0
      LO 2 LRN1-TB    GET BEGIN PATCH OPTION
      MDX RT910        BRANCH TO COMMON
*****
*
*          ROUTINE TEN-WRITE 320
*          RANDOM WDROS-READ AND CK-
*          CYL 202-SECT 6.
*****
RTN10 BSI 2 VERFY-TB   SEEK CYL 202-VERIFY
      DC   202        * THE SEEK
      DC   CNTL        TERMINATE DN ERRDR
      LD 2 LRN2-TB    GET BEGIN PATCH OPTION
      LDX 3 6          IX EQUAL SECTOR 6
*****
*
*          THIS PORTION COMMON TO
*          ROUTINES NINE AND TEN.
*****
RT910 STX 3 SECTD     SAVE SECTDR NUMBER
      SKP Z          SKIP IF ZERO
      STO LSTNO       SAVE BEGIN PATCH OPTION
      LD 2 RNDWR-TB   GET START OPTION
      SKP &-         SKIP IF NDN ZERO
      LD LSTNO        CONTINUE PATTERN
      STO FSTND       SET RTN FIRST NUMBER
RTN9L LD 2 RNDWR-TB   GET START OPTION
      SKP Z          SKIP IF ZERD
      STO LSTNO       SET AS LAST NUMBER

*
      LDX L3 -320     NUMBER OF WORDS
      LD LSTNO        GET LAST NUMBER
      STO RTN9C       SET IN READ CALL

*
RTN9A STO L3 COMA&322 SET PATTERN
      BSI 2 RNDOM-TB  GENERATE NEW NUMBER
```


2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 9

Address	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419
---------	----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

DATE	04NDV66	01OCT67	15FEB68	02DEC68	14NOV69	30JAN70	20MAR70	PROG ID	0809-2
EC NO.	415233	411875	411913	411961	431319	431319A	431320	PAGE	9

IBM MAINTENANCE DIAGNOSTIC PRDGRAM FOR THE 1800 SYSTEM

2310 A/B FUNCTIDN TEST

PART NO. 2196378
PAGE 9A

Address	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419
---------	----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

DATE	04NOV66	01DCT67	15FEB68	02DEC68	14NOV69	30JAN70	20MAR70	PROG ID	0809-2
EC NO.	415233	411875	411913	411961	431319	431319A	431320	PAGE	9A

2310 A/B FUNCTION TEST

```
OC6A 0 F2BF      EOR 2 H1313-TB *
OC6B 1 4C18 OC6F BZ RT12B BRANCH IF FOUND
OC6D 0 73FF      MOX 3 -1 OECR WD COUNT
OC6E 0 70F9      MDX RT12A LDDP
*
OC6F 0 68C0      RT12B STX 3 FSTND SAVE NUMBER OF WORDS
OC70 1 7780 OC38 MDX 13 AVG AOD TO TDAL
OC72 0 68C5      STX 3 AVG SAVE TDAL
*
OC73 0 C2E1      LD 2 K1-TB READ SECTOR 1
OC74 0 4224      BSI 2 READ-TB READ W/D CHECKING
OC75 0 4001      DC 1+/4000 WORD COUNT
OC76 0 C246      LD 2 COMA&1-TB GET ID READ
OC77 0 F298      EDR 2 CY002-TB CK FDR CORRECT
OC78 0 F2E1      EOR 2 K1-TB *
OC79 1 4C18 OC85 BZ RT12D BRANCH IF CORRECT
OC7B 0 C20C      LD 2 RTNER-TB GET ERROR SW
OC7C 0 D2C7      STD 2 ZSNS-TB DUMMY ENTRY
OC7D 0 401D      BSI R12CK CK PRINT SW ONLY
*
OC7E 0 4230      BSI 2 STMSG-TB PRINT ERRDR
OC7F 0 5E18      OC /5E18 MESSAGE ID
OC80 0 C2E1      LO 2 K1-TB RESTORE SECTOR 1
OC81 0 4239      BSI 2 WRITE-TB *
OC82 0 0141      OC 321 *
OC83 0 E5E5      DC /E5E5 *
OC84 1 OC85      DC RT12D ERRDR RETURN
OC85 0 COAA      LD FSTND GET CURRENT WO CT
OC86 0 D2C7      STD 2 ZSNS-TB DUMMY ENTRY
OC87 0 92E9      S 2 K331-TB SUB 331
OC88 1 4C28 OC8D BN RT12G BRANCH IF LESS
OC8A 0 90D1      S K27 SUB 27
OC8B 1 4C08 OC91 BNP RT12F BRANCH IF LESS THAN 358
OC8D 0 C20C      LD 2 RTNER-TB GET ERROR SW
OC8E 0 400C      BSI R12CK CHECK PRT SW ONLY
OC8F 0 4230      BSI 2 STMSG-TB PRINT ERROR
OC90 0 4E17      DC /4E17 MESSAGE ID
OC91 0 C20C      LD 2 RTNER-TB GET ERRDR SW
OC92 0 4218      BSI 2 CKLK-TB CHECK LOCK ON ERROR
OC93 1 OC51      DC RT12Z RETURN IF ON
OC94 0 71FF      MDX 1 -1 DECR RTN LDOP COUNT
OC95 0 70BD      MDX RT12L LDDP
OC96 0 COA1      LD AVG GET TOTAL WORDS
OC97 0 1890      SRT 16 SET IN Q
OC98 0 A812      D NLOOP DIVIDE BY 50
OC99 0 D2F6      STD 2 WRLNG-TB SET IN SUMMARY
OC9A 0 421E      BSI 2 CNTLE-TB EXIT ROUTINE
*
OC9B 0 0000      R12CK DC *-- ENTRY
OC9C 0 C2C7      LD 2 ZSNS-TB GET INTERRUPT DSW
OC9D 0 4828      SKP &Z SKIP IF BIT 0 IS 0
OC9E 0 1007      SLA 7 CHECK BIT 7
OC9F 1 4C28 OCA8 BN RCKX BRANCH IF ON
OCA1 0 C20C      LD 2 RTNER-TB GET ERRDR SW
OCA2 0 421B      BSI 2 CKPRT-TB CHECK PRINT ALL SW
OCA3 0 7004      MDX RCKX RETURN IF DFF
OCA4 0 C0B7      LD K27 SET ERRDR SW
OCA5 0 D20C      STD 2 RTNER-TB *
OCA6 1 4C80 OC9B RCKX1 BSC 1 R12CK EXIT ROUTINE
OCA8 1 7402 OC9B RCKX MDX L R12CK,2 INCR RETURN TO ND PRINT
OCAA 0 70FB      MDX RCKX1 GD EXIT
OCAB 0 0032      NLODP DC LPCNT LDDP COUNT
*
SUB-ROUTINE ZRQDV
*
**** ROUTINE CALL
```

```
80912210
80912220
80912230
80912240
80912250
80912260
80912270
80912280
80912290
80912300
12310
12320
80912330
80912340
80912350
80912360
80912370
80912380
80912390
80912400
80912410
80912420
80912430
80912440
80912450
80912460
80912470
80912480
80912490
80912500
80912510
80912520
80912530
80912540
80912550
80912560
80912570
80912580
80912590
80912600
80912610
80912620
80912630
80912640
80912650
80912660
80912670
80912680
80912690
80912700
80912710
80912720
80912730
80912740
80912750
80912760
80912770
80912780
80912790
80912800
80912810
80912820
80912830
80912840
80912850
80912860
80912870
80912880
```

2310 A/B FUNCTION TEST

```
OCAC 0 C2BC
OCAD 1 4CA8 08C1
*
OCAF 2 4480 0131
OCB1 1 0CB7
OCB2 1 083B
OCB3 1 0826
OCB4 1 080B
OCB5 1 4C80 08C1
*
OCB7 0 422D
OCB8 0 70F6
*
BSI 2 ZRQDV-TB
*
RDUTINE TO REQUEST DEVICE
RQDV LO 2 DDEFX-TB GET SELECTED DDEF
BN I ZRQDV EXIT IF DEVICE CONNECTED
*
REQUEST DEVICE
ZRQDA BSI I REQDV MONITOR CALL
DC ZBUSY BUSY RETURN
DC DDEFX DDEF+SW FNC 2
DC DVA ADDR DVA
OC B I ZRQOV EXIT
*
DEVICE BUSY
ZBUSY BSI 2 STMLS-TB SET RETURN FROM MONITOR
B ZRQDA * AND EXIT TO MONITOR
*
SUB-ROUTINE XEQ
*
THIS ROUTINE WILL BUILD AND ISSUE
AN XID INSTRUCTION.
*
IT WILL THEN WAIT FOR AN INTERRUPT,
LOADING THROUGH THE MONITOR. THE
LOCATION (XCNT) WILL KEEP
THE CURRENT DELAY COUNT FOR A LOST
INTERRUPT.
*
IF AN INTERRUPT IS LOST AN ERROR
MESSAGE IS PRINTED AND THE ROUTINE
TERMINATES THE DFT
*
**** ROUTINE CALL
* BSI 2 XEQ-TB
* IOCC MUST BE PRESET AT LOCATION (ZXIO).
*
XEQE LD 2 ZXID+1-TB GET IOCC
DR 2 OVA-TB COMBINE WITH AREA CODE
STD 2 ZXIO&1-TB SAVE
STD 2 INTSW-TB SET INTRPT SWITCH
BSI 2 ZRQDV-TB REQUEST DEVICE
LDO 2 ZXID-TB SET IOCC USED FOR MSG
STD 2 MDD3-TB *
*
CKRD1 XID 2 SNXIO-TB SENSE DSW
STD 2 TBOSW-TB SAVE
ANO 2 H300Q-TB SAVE BITS 2-3..RDY/BUSY
BZ XEQB BRANCH IF OK
*
DISK IS BUSY AND/OR NOT READY
*
BSI 2 STMSG-TB CALL MSG SETUP RTN
DC /5E03 MESSAGE ID
*
LDDP THRU MONITOR
```

```
OCB9 0 C2CA
OCBA 0 EAA7
OCBB 0 D2CA
OCBC 0 D2A6
OCBO 0 4242
OCBE 0 CAC9
OCBF 0 DAD3
*
OCC0 0 OACB
OCC1 0 D2D1
OCC2 0 E2BE
OCC3 1 4C18 OCCE
*
OCC5 0 4230
OCC6 0 5E03
```

```
80912890
80912900
80912910
80912920
80912930
80912940
80912950
80912960
80912970
80912980
80912990
80913000
80913010
80913020
80913030
80913040
80913050
80913060
80913070
80913080
80913090
80913100
80913110
80913120
80913130
80913140
80913150
80913160
80913170
80913180
80913190
80913200
80913210
80913220
80913230
80913240
80913250
80913260
80913270
80913280
80913290
80913300
80913310
80913320
80913330
80913340
80913350
80913360
80913370
80913380
80913390
80913400
80913410
80913420
80913430
80913440
80913450
80913460
80913470
80913480
80913490
80913500
80913510
80913520
80913530
80913540
80913550
80913560
```


2310 A/B FUNCTION TEST

```
000F 0 D20A      STO 2 NCYL#-TB  SAVE
0010 0 6303      LOX 3 3      COUNTER
                                80914920
                                80914930
                                80914940
0011 0 C20A      * VERFA LO 2 NCYL#-TB  GET DESIRED CYL.
0012 1 F700 081E  EOR L3 BADCY-1  CMP WITH BAD CYLS
0014 1 4C18 0026  BZ TSTCF  BRANCH IF CMP
0016 0 73FF      MOX 3 -1  OECR COUNT
0017 0 70F9      B VERFA  LOOP
                                80914970
                                80914980
                                80914990
                                80915000
                                80915010
0018 1 6780 0859  LDX I3 NCYL#  CYL DESIRED TO IX1
001A 0 73FD      MDX 3 -3  TEST FOR 0-3
001B 0 7005      B TSTCB  BR...4-...
                                80915020
                                80915030
                                80915040
001C 1 C700 0818  * TSTCA LD L3 CY000+3  EDITED CYL
001E 0 1803      SRA 3  RIGHT-JUSTIFY
001F 0 D2DA      STO 2 NCYL#-TB  SET FDR CALL
0020 0 700F      B SEEK  SEEK CYL.
                                80915050
                                80915060
                                80915070
                                80915080
                                80915090
0021 0 73AA      * TSTCB MOX 3 -86  TEST FOR 4-89
0022 0 7001      B TSTCC  90-...
0023 0 700C      B SEEK  4-89
                                80915100
                                80915110
                                80915120
                                80915130
0024 0 73EB      * TSTCC MDX 3 -21  TEST FOR 90-110
0025 0 7002      B TSTCO  111-...
0026 0 4C00 0000  TSTCF B L *-  90-110 TAKE AORS ERR EXIT
                                80915140
                                80915150
                                80915160
                                80915170
0028 0 73A8      * TSTCO MDX 3 -88  TEST FDR 111-198
0029 0 7001      B TSTCE  199-...
002A 0 7005      B SEEK  SEEK CYL
                                80915180
                                80915190
                                80915200
                                80915210
                                80915220
002B 0 73FC      * TSTCE MOX 3 -4  TEST FOR 199-202
002C 0 70F9      B TSTCF  GREATER THAN 202
002D 0 7304      MOX 3 4  CREATE POINTER TO CY000
002E 0 1000      NOP  FDR SKIP
002F 0 70EC      B TSTCA  GET EDITED ENTRY
                                80915230
                                80915240
                                80915250
                                80915260
                                80915270
                                80915280
                                80915290
                                80915300
                                80915310
                                80915320
                                80915330
                                80915340
                                80915350
                                80915360
                                80915370
                                80915380
                                80915390
                                80915400
                                80915410
                                80915420
                                80915430
                                80915440
                                80915450
                                80915460
                                80915470
                                80915480
                                80915490
                                80915500
                                80915510
                                80915520
                                80915530
                                80915540
                                80915550
                                80915560
                                80915570
                                80915580
                                80915590
                                80915600
                                80915610
                                80915620
                                80915630
                                80915640
                                80915650
                                80915660
                                80915670
                                80915680
                                80915690
                                80915700
                                80915710
                                80915720
                                80915730
                                80915740
                                80915750
                                80915760
                                80915770
                                80915780
                                80915790
                                80915800
                                80915810
                                80915820
                                80915830
                                80915840
                                80915850
                                80915860
                                80915870
                                80915880
                                80915890
                                80915900
                                80915910
                                80915920
                                80915930
                                80915940
                                80915950
                                80915960
                                80915970
                                80915980
                                80915990
                                80916000
                                80916010
                                80916020
                                80916030
                                80916040
                                80916050
                                80916060
                                80916070
                                80916080
                                80916090
                                80916100
                                80916110
                                80916120
                                80916130
                                80916140
                                80916150
                                80916160
                                80916170
                                80916180
                                80916190
                                80916200
                                80916210
                                80916220
                                80916230
                                80916240
                                80916250
                                80916260
                                80916270

THIS SUBROUTINE WILL ISSUE THE
SEEK I/D COMMAND, CHECK THE OSW
FDR ANY ERRORS.

A MAXIMUM OF EIGHT RETRIES WILL
BE MADE ON OSW ERRORS. IF THERE
ARE EIGHT SEEK INCOMPLETE ERRORS,
THE DFT PRDGRAM IS TERMINATED TO PREVENT
DAMAGE TO THE DISK DRIVE.

THE LOCK-DN-ERROR OPTION WILL
LOCK THE RDUTINE IN THE SEEK SUB-
ROUTINE FOR OSW ERRORS OTHER THAN
SEEK INCOMPLETE AS LONG AS THE
SWITCH IS ON, EVEN IF THE ERROR
IS INTERMITTENT.

SEEK SLA 16 ZERO A REG.
STO 2 ERSK1-TB CLEAR ERROR COUNTERS
LO 2 K8-TB PRESET RETRY CTRS
STO 2 CNTA-TB * INVALID ADDRESS ERROR
STO 2 CNTB-TB * SEEK INCOMPLETE ERROR
LOX 3 SKCNT-SUMRY POINTER
BSI 2 COUNT-TB INCR SEEK COUNT

* GET IOCC FOR MOVE-ARM-OUT
*
SEEKA LO 2 XSKBK-TB IOCC FOR MOVE-ARM-OUT
```

```
0030 0 1010
0031 0 0208
0032 0 C2E6
0033 0 D2F0
0034 0 02DC
0035 0 6302
0036 0 4221
```

0037 0 C2BD

2310 A/B FUNCTION TEST

```
0038 0 0245      STO 2 COMA-TB  SET CK-NDT-ROY SW
0039 0 1890      SRT 16  * TO Q REG.
                                80915600
                                80915610
                                80915620
                                80915630
                                80915640
                                80915650
                                80915660
                                80915670
                                80915680
                                80915690
                                80915700
                                80915710
                                80915720
                                80915730
                                80915740
                                80915750
                                80915760
                                80915770
                                80915780
                                80915790
                                80915800
                                80915810
                                80915820
                                80915830
                                80915840
                                80915850
                                80915860
                                80915870
                                80915880
                                80915890
                                80915900
                                80915910
                                80915920
                                80915930
                                80915940
                                80915950
                                80915960
                                80915970
                                80915980
                                80915990
                                80916000
                                80916010
                                80916020
                                80916030
                                80916040
                                80916050
                                80916060
                                80916070
                                80916080
                                80916090
                                80916100
                                80916110
                                80916120
                                80916130
                                80916140
                                80916150
                                80916160
                                80916170
                                80916180
                                80916190
                                80916200
                                80916210
                                80916220
                                80916230
                                80916240
                                80916250
                                80916260
                                80916270

TEST FOR FAST OR SLDW ACCESS

LD 2 MDEL-TB  NON-ZERO = FAST ACCESS
BNZ SEEKC  BRANCH IF NOT ZERO

SLOW ACCESS

LD 2 NCYL#-TB  CYL. DESIRED TO A
S 2 PCYL#-TB  SUBTRACT PRESENT CYL. #
BZ VERFB  BR IF ZERO
BN SEEKB  BRANCH DN MDVE TDWARD HOME
SRT 3  ZERD BIT 13 IN Q REG. TO
SLT 3  * INDICATE MDVE ARM IN
B SEEKD  *

SEEKB EOR 2 TERM-TB  FORM TWD'S COMPLEMENT
A 2 K1-TB  * DF # DF CYL. MDVEMENTS
B SEEKD  *

SEEKC LO 2 NCYL#-TB  CYL. DESIRED TO A

SEEKD STD 2 ZXIO-TB  SET IOCC FDR XEQ CALL
STD 2 MD03-TB  *
BSI 2 XEQ-TB  CALL EXECUTE I/O

CHECK OSW FOR ERROR

SLA 10  CHECK FDR SEEK ERROR
BN SEEKF  BRANCH ON ERROR

CHECK FOR PREVIOUS ERROR(S)

LD 2 ERSK1-TB  GET ERRDR SWITCH
STO 2 M003-TB  STORE FOR PRINT
BZ VERFB  BR IF NO ERRDR
BSI 2 CKLK-TB  CHECK LOCK-ON-ERROR OPTIDN
DC SEEKA  BRANCH IF SET
BSI 2 STMSG-TB  RECOVERED ERROR
OC /4A01  MESSAGE IO
LDX 3 SFTSK-SUMRY  POINTER
BSI 2 COUNT-TB  INCR SOFT SEEK ERROR
B VERFB  NOT SET/ NDRMAL EXIT

FOUND DSW ERRDR

SEEKF MOX L ERSK1,1  SET ERROR SWITCH

GET PRESENT OSW

XID 2 SNXID-TB  SENSE DSW
SLA 10  HAS SEEK ERROR BEEN RESET
BN SEEKG  * BRANCH IF NO

INVALID ADDRESS OSW ERROR

BSI 2 STMSG-TB  PRINT INVALID AORS ERROR
OC /0E05  MESSAGE IO
LD 2 ERSK1-TB  GET ERROR SWITCH
BSI 2 CKLK-TB  CHECK LOCK-ON-ERRDR DPTION
OC SEEKA  BRANCH IF SET
MOX L CNTA,-1  DECREMENT RETRY CNTR A
MOX SEEKA  NOT EIGHT RETRIES YET

OSW ERROR EXIT
```

```
003A 0 C20E
003B 1 4C20 0049
```

```
0030 0 C20A
003E 0 9209
003F 1 4C18 0079
0041 1 4C28 0D46
0043 0 1883
0044 0 1083
0045 0 7004
```

```
0046 0 F28C
0047 0 82E1
0048 0 7001
```

```
0049 0 C2DA
004A 0 DAC9
004B 0 0A03
004C 0 423C
```

```
004D 0 100A
004E 1 4C28 005B
```

```
0050 0 C20B
0051 0 0203
0052 1 4C18 0079
0054 0 4218
0055 1 0037
0056 0 4230
0057 0 4A01
0058 0 6303
0059 0 4221
005A 0 701E
```

005B 1 7401 085A

```
005D 0 0ACB
005E 0 100A
005F 1 4C28 0070
```

```
0061 0 4230
0062 0 0E05
0063 0 C20B
0064 0 4218
0065 1 0D37
0066 1 74FF 087C
0068 0 70CE
```

2310 A/B FUNCTION TEST

```
OD69 0 CAD9      LDD 2 PCYL#-TB  SET PRINT MSG      80916280
OD6A 0 DAD3      STD 2 MOD3-TB   *                  80916290
OD6B 0 4230      BSI 2 STMSG-TB  UNRECOVERED ERROR   80916300
OD6C 0 3E06      DC   /3E06     MESSAGE ID          80916310
OD6D 0 6304      LDX 3 HRDSK-SUMRY PDINTER          80916320
OD6E 0 4221      BSI 2 COUNT-TB  INCR HARD SEEK ERRDR 80916330
OD6F 0 421E      BSI 2 CNTLE-TB  EXIT RDUTINE        80916340
*
* SEEK INCOMPLETE ERRDR (200 MS ONE-SHOT) 80916350
*
* SEEKG BSI 2 STMSG-TB  SEEK INCOMPLETE ERRDR(DSW) 80916360
* DC /OE07 MESSAGE ID 80916370
* MDX L CNTB,-1 DECR RETRY COUNTER 80916380
* B SEEKA LOOP 80916390
* LDX 3 HRDSK-SUMRY CDUNT HARD SEEK ERROR 80916400
* BSI 2 COUNT-TB * 80916410
* 8SI 2 TEXIT-TB TERMINATE DFT 80916420
*-----
* 80916430
* 80916440
* 80916450
* 80916460
* 80916470
* 80916480
* 80916490
* 80916500
* 80916510
* 80916520
* 80916530
* 80916540
* 80916550
* 80916560
* 80916570
* 80916580
* 16590
* 16600
* 80916610
* 80916620
* 80916630
* 80916640
* 80916650
* 80916660
* 80916670
* 80916680
* 80916690
* 80916700
* 80916710
* 80916720
* 80916730
* 80916740
* 80916750
* 80916760
* 80916770
* 80916780
* 80916790
* 80916800
* 80916810
* 80916820
* 80916830
* 80916840
* 80916850
* 80916860
* 80916870
* 80916880
* 80916890
* 80916900
* 80916910
* 80916920
* 80916930
* 80916940
* 80916950

OD70 0 4230      LDD 2 PCYL#-TB  SET PRINT MSG      80916280
OD71 0 OE07      STD 2 MOD3-TB   *                  80916290
OD72 1 74FF 085B BSI 2 STMSG-TB  UNRECOVERED ERROR   80916300
OD74 0 70C2      DC   /3E06     MESSAGE ID          80916310
OD75 0 6304      LDX 3 HRDSK-SUMRY PDINTER          80916320
OD76 0 4221      BSI 2 COUNT-TB  INCR HARD SEEK ERRDR 80916330
OD77 0 4233      BSI 2 CNTLE-TB  EXIT RDUTINE        80916340
*
* SEEK INCOMPLETE ERRDR (200 MS ONE-SHOT) 80916350
*
* SEEKG BSI 2 STMSG-TB  SEEK INCOMPLETE ERRDR(DSW) 80916360
* DC /OE07 MESSAGE ID 80916370
* MDX L CNTB,-1 DECR RETRY COUNTER 80916380
* B SEEKA LOOP 80916390
* LDX 3 HRDSK-SUMRY CDUNT HARD SEEK ERROR 80916400
* BSI 2 COUNT-TB * 80916410
* 8SI 2 TEXIT-TB TERMINATE DFT 80916420
*-----
* 80916430
* 80916440
* 80916450
* 80916460
* 80916470
* 80916480
* 80916490
* 80916500
* 80916510
* 80916520
* 80916530
* 80916540
* 80916550
* 80916560
* 80916570
* 80916580
* 16590
* 16600
* 80916610
* 80916620
* 80916630
* 80916640
* 80916650
* 80916660
* 80916670
* 80916680
* 80916690
* 80916700
* 80916710
* 80916720
* 80916730
* 80916740
* 80916750
* 80916760
* 80916770
* 80916780
* 80916790
* 80916800
* 80916810
* 80916820
* 80916830
* 80916840
* 80916850
* 80916860
* 80916870
* 80916880
* 80916890
* 80916900
* 80916910
* 80916920
* 80916930
* 80916940
* 80916950

OA30 0           8DCYL EQU      ENDCM-8      USED IN VERFY ONLY
*
* READ EIGHT SECTOR IOS
*
* TMPX DC **      SECTOR POINTER
* VERFB LDX 1 -8   SET LODP COUNTER
* VERFC STX 1 TMPX SET SECTOR TO READ
* LD TMPX GET SECTOR TO READ
* AND 2 K7-TB SAVE SECTOR ID
* BSI 2 READ-TB READ W/O CHECKING
* DC 1+/4000 WD COUNT
* LD 2 COMA&1-TB GET ID READ
* STD L1 BDCYL&8 SAVE
* MDX 1 1 DECR LODP CTR
* B VERFC LODP
*
* CHECK FDR ALL 8 CYLINDER IDS
* THE SAME
*
* LDX 1 -7 SET LOOP COUNTER
* VERFD LD L BDCYL CK FDR ALL SAME CYLINDER
* EOR L1 BDCYL&8 *
* SRA 3 *
* BNZ VERFJ BRANCH IF NOT
* MDX 1 1 DECR LOOP CTR
* B VERFD LOOP
*
* CHECK SECTDRS FOR SEQUENTIAL
*
* LDX 1 -8 SET LODP CTR
* VERFE STX 1 TMPX CK FOR SEQ SECTORS
* LD L1 BDCYL&8 *
* EDR TMPX *
* AND 2 K7-TB *
* BNZ VERFJ BRANCH ON ERROR
* MDX 1 1 DECR LODP CTR
* B VERFE LODP
*
* CHECK FOR EXPECTED CYLINDER
*
* LDD 2 PCYL#-TB SET PRINT MESSAGE
* STD 2 MOD3-TB *
* LD 2 COMA&1-TB CK FOR EXPECTED CYLINDER
* SRT 3 *
* STO 2 MOD5-TB SAVE FOR PRINT
* STO 2 PCYL#-TB SET AS PRESENT CYLINDER
```

2310 A/B FUNCTION TEST

```
OD9E 0 F2DA      EDR 2 NCYL#-TB IS IT EXPECTED      80916960
OD9F 1 4C18 0DB9 BZ VERFI BRANCH IF YES            80916970
*
* CYLINDER ID NDT AS EXPECTED 80916980
*
* BSI 2 STMSG-TB PRINT MESSAGE 80916990
* DC /AE0D MESSAGE ID 80917000
* LDX 3 SFTSK-SUMRY CDUNT SOFT SEEK ERROR 80917010
* BSI 2 COUNT-TB * 80917020
* MDX L WRTTY,-1 DECR RETRY COUNTER 80917030
* B SEEK RETRY THE SEEK 80917040
*
* UNABLE TO REACH DESIRED CYLINDER 80917050
*
* VERFF LDX 1 -5 SET LODP COUNTER 80917060
* VERFG LDD L1 BDCYL&5 SET HARD ERROR MSG 80917070
* STD 2 MDD3-TB * 80917080
* LDD L1 BDCYL&7 * 80917090
* STD 2 MDD5-TB * 80917100
* MDX 1 4 DECR CTR 80917110
* MDX VERFH BRANCH 80917120
* BSI 2 STMSG-TB PRINT 2ND LINE W/O PID,MID 17170 80917130
* DC /8EOE+/80 FORM NO/MSG ID 17180 80917140
* LDX 3 HRDSK-SUMRY COUNT HARD SEEK ERROR 80917150
* BSI 2 COUNT-TB * 80917160
* BSI 2 TEXIT-TB TERMINATE DFT 80917170
* VERFH BSI 2 STMSG-TB PRINT LINE 1 80917180
* DC /8EOE MESSAGE ID 80917190
* B VERFG BRANCH 80917200
*
* REACHED PROPER CYLINDER-CHECK 80917210
* FOR PREVIOUS ERRORS 80917220
*
* VERFI LD 2 WRTTY-TB CK PREVIOUS ERRORS 80917230
* S 2 K8-TB * 80917240
* BZ VERFX GO EXIT RTN 80917250
* BSI 2 CKLK-TB CHECK LDCK ON ERROR 80917260
* DC SEEK RETURN IF DN 80917270
* BSI 2 STMSG-TB PRINT RECOVERED ERROR 80917280
* DC /5A06 MESSAGE ID 80917290
* VERFX LDX L1 *- * RESTORE INDEX 1 80917300
*
* CHECK HOME BIT FDR EXPECTED 80917310
*
* LD 2 PCYL#-TB GET PRESENT CYLINDER 80917320
* STO 2 MOD3-TB * 80917330
* SKP Z SKIP IF CYL ZERO 80917340
* LD 2 TERM-TB MAKE HOME BIT ZERO 80917350
* EDR 2 ZSNS-TB * 80917360
* SLA 4 CHECK HDME BIT 80917370
* BN 1 VERFY EXIT ROUTINE 80917380
* BSI 2 STMSG-TB PRINT HDME BIT INCORRECT 80917390
* DC /4E12 MESSAGE ID 80917400
* B 1 VERFY EXIT ROUTINE 80917410
*
* SECTOR IDS ARE NOT SEQUENTIAL 80917420
*
* VERFJ MDX L RTCNT,-1 DECR RETRY COUNTER 80917430
* B VERFB GO RETRY READ (NOT SEEK) 80917440
* B VERFF ERROR BRANCH 80917450
*-----
* 80917460
* 80917470
* 80917480
* 80917490
* 80917500
* 80917510
* 80917520
* 80917530
* 80917540
* 80917550
* 80917560
* 80917570
* 80917580
* 80917590
* 80917600
* 80917610
* 80917620
* 80917630

ODA1 0 4230      LDD 2 PCYL#-TB  SET PRINT MSG      80916280
ODA2 0 AE0D      STD 2 MOD3-TB   *                  80916290
ODA3 0 6303      BSI 2 STMSG-TB  UNRECOVERED ERROR   80916300
ODA4 0 4221      DC   /3E06     MESSAGE ID          80916310
ODA5 1 74FF 0889 LDX 3 HRDSK-SUMRY PDINTER          80916320
ODA7 0 7088      BSI 2 COUNT-TB  INCR HARD SEEK ERRDR 80916330
*
* SEEK INCOMPLETE ERRDR (200 MS ONE-SHOT) 80916340
*
* SEEKG BSI 2 STMSG-TB  SEEK INCOMPLETE ERRDR(DSW) 80916350
* DC /OE07 MESSAGE ID 80916360
* MDX L CNTB,-1 DECR RETRY COUNTER 80916370
* B SEEKA LOOP 80916380
* LDX 3 HRDSK-SUMRY CDUNT HARD SEEK ERROR 80916390
* BSI 2 COUNT-TB * 80916400
* 8SI 2 TEXIT-TB TERMINATE DFT 80916410
*-----
* 80916420
* 80916430
* 80916440
* 80916450
* 80916460
* 80916470
* 80916480
* 80916490
* 80916500
* 80916510
* 80916520
* 80916530
* 80916540
* 80916550
* 80916560
* 80916570
* 80916580
* 16590
* 16600
* 80916610
* 80916620
* 80916630
* 80916640
* 80916650
* 80916660
* 80916670
* 80916680
* 80916690
* 80916700
* 80916710
* 80916720
* 80916730
* 80916740
* 80916750
* 80916760
* 80916770
* 80916780
* 80916790
* 80916800
* 80916810
* 80916820
* 80916830
* 80916840
* 80916850
* 80916860
* 80916870
* 80916880
* 80916890
* 80916900
* 80916910
* 80916920
* 80916930
* 80916940
* 80916950

OD8A 0 61F8      LDD 2 PCYL#-TB  SET PRINT MSG      80916280
OD8B 0 92E6      STD 2 MOD3-TB   *                  80916290
OD8C 1 4C18 0DC1 BSI 2 STMSG-TB  UNRECOVERED ERROR   80916300
OD8D 0 4218      DC   /3E06     MESSAGE ID          80916310
OD8E 1 0D30      LDX 3 HRDSK-SUMRY PDINTER          80916320
OD8F 0 4230      BSI 2 COUNT-TB  INCR HARD SEEK ERRDR 80916330
ODC0 0 5A06      BSI 2 CNTLE-TB  EXIT RDUTINE        80916340
ODC1 0 6500 0000 BZ VERFI BRANCH IF YES            80916350
*
* CYLINDER ID NDT AS EXPECTED 80916360
*
* BSI 2 STMSG-TB PRINT MESSAGE 80916370
* DC /AE0D MESSAGE ID 80916380
* LDX 3 SFTSK-SUMRY CDUNT SOFT SEEK ERROR 80916390
* BSI 2 COUNT-TB * 80916400
* MDX L WRTTY,-1 DECR RETRY COUNTER 80916410
* B SEEK RETRY THE SEEK 80916420
*
* UNABLE TO REACH DESIRED CYLINDER 80916430
*
* VERFF LDX 1 -5 SET LODP COUNTER 80916440
* VERFG LDD L1 BDCYL&5 SET HARD ERROR MSG 80916450
* STD 2 MDD3-TB * 80916460
* LDD L1 BDCYL&7 * 80916470
* STD 2 MDD5-TB * 80916480
* MDX 1 4 DECR CTR 80916490
* MDX VERFH BRANCH 80916500
* BSI 2 STMSG-TB PRINT 2ND LINE W/O PID,MID 17170 80916510
* DC /8EOE+/80 FORM NO/MSG ID 17180 80916520
* LDX 3 HRDSK-SUMRY COUNT HARD SEEK ERROR 80916530
* BSI 2 COUNT-TB * 80916540
* BSI 2 TEXIT-TB TERMINATE DFT 80916550
* VERFH BSI 2 STMSG-TB PRINT LINE 1 80916560
* DC /8EOE MESSAGE ID 80916570
* B VERFG BRANCH 80916580
*
* REACHED PROPER CYLINDER-CHECK 80916590
* FOR PREVIOUS ERRORS 80916600
*
* VERFI LD 2 WRTTY-TB CK PREVIOUS ERRORS 80916610
* S 2 K8-TB * 80916620
* BZ VERFX GO EXIT RTN 80916630
* BSI 2 CKLK-TB CHECK LDCK ON ERROR 80916640
* DC SEEK RETURN IF DN 80916650
* BSI 2 STMSG-TB PRINT RECOVERED ERROR 80916660
* DC /5A06 MESSAGE ID 80916670
* VERFX LDX L1 *- * RESTORE INDEX 1 80916680
*
* CHECK HOME BIT FDR EXPECTED 80916690
*
* LD 2 PCYL#-TB GET PRESENT CYLINDER 80916700
* STO 2 MOD3-TB * 80916710
* SKP Z SKIP IF CYL ZERO 80916720
* LD 2 TERM-TB MAKE HOME BIT ZERO 80916730
* EDR 2 ZSNS-TB * 80916740
* SLA 4 CHECK HDME BIT 80916750
* BN 1 VERFY EXIT ROUTINE 80916760
* BSI 2 STMSG-TB PRINT HDME BIT INCORRECT 80916770
* DC /4E12 MESSAGE ID 80916780
* B 1 VERFY EXIT ROUTINE 80916790
*
* SECTOR IDS ARE NOT SEQUENTIAL 80916800
*
* VERFJ MDX L RTCNT,-1 DECR RETRY COUNTER 80916810
* B VERFB GO RETRY READ (NOT SEEK) 80916820
* B VERFF ERROR BRANCH 80916830
*-----
* 80916840
* 80916850
* 80916860
* 80916870
* 80916880
* 80916890
* 80916900
* 80916910
* 80916920
* 80916930
* 80916940
* 80916950

ODCF 1 74FF 08B8 LDD 2 PCYL#-TB  SET PRINT MSG      80916280
ODD1 0 70A7      STD 2 MOD3-TB   *                  80916290
ODD2 0 70D5      BSI 2 STMSG-TB  UNRECOVERED ERROR   80916300
*
* SEEK INCOMPLETE ERRDR (200 MS ONE-SHOT) 80916310
*
* SEEKG BSI 2 STMSG-TB  SEEK INCOMPLETE ERRDR(DSW) 80916320
* DC /OE07 MESSAGE ID 80916330
* MDX L CNTB,-1 DECR RETRY COUNTER 80916340
* B SEEKA LOOP 80916350
* LDX 3 HRDSK-SUMRY CDUNT HARD SEEK ERROR 80916360
* BSI 2 COUNT-TB * 80916370
* 8SI 2 TEXIT-TB TERMINATE DFT 80916380
*-----
* 80916390
* 80916400
* 80916410
* 80916420
* 80916430
* 80916440
* 80916450
* 80916460
* 80916470
* 80916480
* 80916490
* 80916500
* 80916510
* 80916520
* 80916530
* 80916540
* 80916550
* 80916560
* 80916570
* 80916580
* 16590
* 16600
* 80916610
* 80916620
* 80916630
* 80916640
* 80916650
* 80916660
* 80916670
* 80916680
* 80916690
* 80916700
* 80916710
* 80916720
* 80916730
* 80916740
* 80916750
* 80916760
* 80916770
* 80916780
* 80916790
* 80916800
* 80916810
* 80916820
* 80916830
* 80916840
* 80916850
* 80916860
* 80916870
* 80916880
* 80916890
* 80916900
* 80916910
* 80916920
* 80916930
* 80916940
* 80916950
```

2310 A/B FUNCTION TEST

```
* THIS ROUTINE WILL ISSUE THE READ OPERATION, CHECK THE DSW
* FOR ERRORS AND CALL THE COMPARE SUB-ROUTINE TO CHECK
* FOR ANY ERRORS.
*
* A MAXIMUM OF EIGHT RETRYS WILL BE MADE ON BOTH A DSW OR A
* COMPARE ERROR.
*
* THE LOCK ON ERROR OPTION WILL LOCK THE ROUTINE IN THE READ
* OPTION AS LONG AS THE SWITCH IS ON EVEN IF THE ERROR IS
* INTERMITTENT.
*
**** ROUTINE CALL
*
* (A)=SECTOR COUNT
* BSI 2 READ-TB
* DC WDCNT NO. OF WORDS TO BE READ
*
* * BIT 0 EQUAL 1 MEANS USE
* * RANDOM DATA FOR COMPARE
* * BIT 1 EQUAL 1 MEANS TO
* * READ AND RETURN WITHOUT
* * CHECKING THE DSW OR DATA
* USED IN COMPARE
*
* DC NUMBER
* DC CMPERR ADRS OF CMP ERROR RETURN
*
*-----
*
* ODD3 0 EAC3 RDEN OR 2 DSK*TD-TB COMBINE WITH READ
* ODD4 0 1890 SRT 16 A TO Q
* ODD5 0 D2DF STO 2 RDDSW-TB CLEAR DSW ERROR COUNTER
* ODD6 0 D2E0 STO 2 RDCMP-TB CLEAR CMP ERROR COUNTER
* ODD7 0 C215 LD 2 ADCMA-TB
* ODD8 0 DAC9 STO 2 ZXIO-TB SET FOR XEQ CALL
* ODD9 0 108D SLT 13 SECTOR TO 0-2 Q REG.
* ODDA 0 C2DA LD 2 NCYL*-TB GET CYL. # WHERE DISK S/B
*
* * AFTER LAST SEEK
* ODDB 0 1083 SLT 3 COMBINE FOR COMPARE
* ODDC 0 D206 STO 2 IDS*B-TB PRESENT SECTOR ID
*
*
* LDX 13 READ GET CALLING ADRS+1
* LD 3 0 GET WORD COUNT
* STO 2 RNOCK-TB IF NEG. USE RANDOM NUMBERS
* SLA 1 CLEAR BIT 0/BIT 1 SET
* STO 2 NOCK-TB * MEANS DON'T CHECK FOR ER
* SLA 1 CLEAR BIT 1
* SRA 2 *
* STO 2 COMA-TB WORD COUNT
* STO 2 LNGTH-TB * FOR COMPARE RTN
* LD 3 1 GET NUMBER
* STO 2 CMPTM-TB * FOR COMPARE RTN
* LD 3 2 GET CMP ERROR ADRS
* STO RDCPX+1 SET FOR CMP ERROR EXIT
* ODEB 1 7401 08A3 MDX L READ,1 INCR FOR NO-CHECK RETURN
* ODED 0 6305 LDX 3 RDCNT-SUMRY POINTER FOR SUMMARY
* ODEE 0 4221 BSI 2 COUNT-TB INCR READ COUNT
*
* READA LDD 2 K8-TB SET RETRY COUNTER
* ODF0 D DADD STO 2 RTRYA-TB * TO 8
*
* PRESET I/O AREA TO /FFFF
*
* READB LD 2 TERM-TB /FFFF
* ODF1 D C28C BSI 2 SETV-TB CALL PRESET ROUTINE
* ODF2 D 422A
```

2310 A/B FUNCTION TEST

```
* ISSUE A READ OPERATION THRU THE XEQ SUB-ROUTINE
*
* ODF3 0 423C BSI 2 XEQ-TB ISSUE READ COMMAND
*
* IF NOCK NEG DONT CHECK FOR DSW ERRORS, BUT EXIT AS IF NORMAL READ.
*
* ODF4 0 C2FF LD 2 NOCK-TB GET NO CHECK SWITCH
* ODF5 1 4C28 0E09 BN RDNCK EXIT IF NEGATIVE
*
* CHECK DSW FOR ERRORS
*
* ODF7 0 C2C7 LD 2 ZSNS-TB INTRPT DSW
* ODF8 1 4C28 0E16 BN RDER2 BRANCH ON ERROR
* ODF9 0 4039 BSI CMP CALL COMPARE RTN
* ODFB 0 700F B RDER1 COMPARE ERROR RETURN
* ODFC 0 CADF LDD 2 RDDSW-TB GET ERROR COUNTS
* ODFD 0 DAD3 STD 2 MOD3-TB STORE IN CASE PRINT
* ODFE 0 82E0 A 2 RDCMP-TB ADD COMPARE ERRORS
* ODF7 1 4C18 0E07 BZ READX BRANCH IF NO ERRORS
* OE01 0 4218 BSI 2 CKLK-TB CHECK LOCK ON ERROR SW
* OE02 1 0DEF DC READA IF SET
* OE03 0 6306 LDX 3 SFTRD-SUMRY POINTER
* OE04 0 4221 BSI 2 COUNT-TB SOFT READ ERROR
* OE05 0 4230 BSI 2 STMSG-TB PRINT MESSAGE
* OE06 0 3A02 DC /3A02 FORM NO./MID
*
* READX MDX L READ,2 INCR FOR NORMAL RETURN
*
* RDNCK B I READ RETURN
*
* RDER1 MDX L RDCMP,1 COUNT COMPARE ERROR
* MDX L RTRYA,-1 DECR RETRY COUNTER
* B READB LOOP
* LDD 2 RDDSW-TB GET ERROR COUNTERS
* STO 2 MOD3-TB STORE FOR PRINT
* BSI 2 STMSG-TB PRINT MESSAGE
* DC /3A05 FORM NO./MID
* RDCPX B L *- COMPARE ERROR EXIT
*
* RDER2 LD 2 RDDSW-TB GET DSW ERROR COUNT
* MDX L RDDSW,1 BUMP COUNT
* BSI 2 CKPRT-TB CK PRINT-ALL-ERRORS OPTION
* B RDR2B 8R AROUND PRINT
* BSI 2 STMSG-TB PRINT ERROR MESSAGE
* DC /5E09 MESSAGE ID
* RDR2B BSI CMP CALL COMPARE RTN
* B RDER4 COMPARE ERROR RETURN
* MDX L RTRYA,-1 DECR RETRY COUNTER
* B READB LOOP
*
* RDER3 LDD 2 RDDSW-TB GET ERROR COUNTERS
* STD 2 MOD3-TB STORE IN CASE PRINT
* BSI 2 CKLK-TB CHECK LOCK-ON-ERROR
* DC READA IF SET
* BSI 2 STMSG-TB PRINT MESSAGE
* DC /3E0A FORM NO./MID
* LDX 3 HRDRD-SUMRY POINTER
* BSI 2 COUNT-TB HARD READ ERROR
* LD 2 RTRYA-TB GET DSW RETRY COUNTER
* BZ READX NORMAL EXIT/NO CMP ERRORS
* * ON LAST READ
* B RDCPX TAKE CMP ERROR EXIT
*
* RDER4 MDX L RDCMP,1 INCR CMP ERROR COUNT
* MDX L RTRYB,-1 DECR CMP ERROR COUNT
* B READB LOOP
```

2310 A/B FUNCTION TEST

```

0E58 1 6780 0880
0E5A 1 C700 08C4
0E5C 1 8700 08C5
0E5E 0 82E2
0E5F 1 4C18 0E67
0E61 0 C2E0
0E62 0 421B

```

```
0E9D 0 6301
0E9E 0 400C
0E9F 1 4C80 0E6E
```



```

0EA1 0 C204      *
0EA2 0 4227      CMRND LD      2 S#B-TB      GET CURRENT NUMBER      80920410
0EA3 0 0205      BSI      2 RNDOM-TB      GET NEXT NUMBER      80920420
0EA4 0 C204      STO      2 S#B&1-TB      SET      80920430
0EA5 0 40C8      CMRNI LO      2 S#B-TB      CK CURRENT NUMBER      80920440
0EA6 0 C204      BSI      *      80920450
0EA7 0 D203      LD      2 S#B-TB      SET PREVIOUS NUMBER      80920460
0EA8 0 D205      STO      2 S#B-1-TB      *      80920470
0EA9 0 D204      LO      2 S#B&1-TB      SET CURRENT NUMBER      80920480
0EAA 0 709E      STO      2 S#B-TB      *      80920490
      B      CMP2      CK FOR COMPLETE      80920500
      *      80920510
0EAB 0 0000      *      80920520
0EAC 0 C2E0      PNTB DC      *--      ENTRY      80920530
0EAD 0 4218      LD      2 ROCMP-TB      GET CMP ERROR COUNT      80920540
0EAE 0 700F      BSI      2 CKPRT-TB      CK PRINT-ALL-ERRORS OPTION      80920550
0EAF 0 C700 0000      B      PNTBX      OON'T PRINT IF NOT SET      80920560
0EB1 0 0205      PNTC LO      L3 *--      GET WORD READ      80920570
0EB2 1 C700 0883      STO      2 MOO5-TB      SET FOR PRINT      80920580
0EB4 0 D204      LD      L3 S#B      GET WORD EXPECTED      80920590
0EB5 1 7780 0880      STO      2 MOD4-TB      SET FOR PRINT      80920600
0EB7 0 1000      MOX      I3 INDEX      ADJUST INDEX      80920610
0EB8 1 6F00 0852      NOP      IN CASE SKIP OCCURS      80920620
0EBA 1 6F00 0886      STX      L3 MOO3      SET FOR PRINT      80920630
0EBC 0 4230      STX      L3 LPRNT      SET AS LAST WORD PRINTED      80920640
0EBD 0 6E90      BSI      2 STMSG-TB      PRINT W/O PIO,MID,RID,RAO      20650
0EBE 1 4C80 0EAB      DC      /6E10+/80      FORM #/MSG ID      20660
      PNTBX B      I      PNTB      EXIT      80920670
      *      80920680
      *      80920690
      *      80920700
      *      80920710
      *      80920720
      *      80920730
      *      80920740
      *      80920750
      *      80920760
      *      80920770
      *      80920780
      *      80920790
      *      80920800
      *      80920810
      *      80920820
      *      80920830
      *      80920840
      *      80920850
      *      80920860
      *      80920870
      *      80920880
      *      80920890
      *      80920900
      *      80920910
      *      80920920
      *      80920930
      *      80920940
      *      80920950
      *      80920960
      *      80920970
      *      80920980
      *      80920990
      *      80921000
      *      80921010
      *      80921020
      *      80921030
      *      21031
      *      80921040
      *      80921050
      *      80921060

```

Address	Operation	Register	Value	Comment	Address
0EC0 0 EAC2	WRTE	OR	2	WRM00-TB	COMBINE WITH WRT FNC
0EC1 0 1890		SRT	16		A TO Q
0EC2 0 020B		STO	2	WRERR-TB	CLEAR ERRO CNT
0EC3 0 C215		LO	2	ADCM-A-TB	ADRS OF COMA
0EC4 0 0AC9		STO	2	ZXIO-TB	SET FOR XEQ
0EC5 0 1080		SLT	13		POSITION SECTOR COUNT
0EC6 0 C2D9		LO	2	PCYL#-TB	GET PRESENT CYLINDER
0EC7 0 1083		SLT	3		CREATE SECTOR ID
0EC8 0 0206		STO	2	IDS#B-TB	UPOATE SECTOR ID
0EC9 0 D246		STO	2	COMA+1-TB	SET FOR WRITE OP
OECA 0 6308		LOX	3	WRCNT-SUMRY	POINTER
0ECB 0 4221		BSI	2	COUNT-TB	INCR WRITE COUNT
0ECC 0 C2E6		LD	2	K8-TB	SET RETRY COUNTER
0ECD 0 020A		STO	2	WRTTY-TB	* TO EIGHT
OECE 1 6780 08B8		LOX	13	WRITE	GET ADRS OF CALL+1
0EDO 0 C302		LD	3	2	GET ERROR RETURN ADDRESS
0ED1 0 D026		STO		WRTE+1	SET FOR EXIT
0EO2 0 C300		LO	3	0	GET WORD COUNT WORD
0EO3 0 02FF		STO	2	NOCK-TB	BIT 0 MEANS DON'T CK ERROR
0EO4 0 18DE		RTE	30		SAVE BITS 0-1
0EO5 0 1802		SRA	2		WORD CNT W/O BIT 0-1
0EO6 0 0245		STO	2	COMA-TB	SET WORD COUNT
0EO7 0 18C1		RTE	1		GET BIT 1 BACK
0EO8 1 4C28 0EDC		BN		WRTF	BIT 0 SET MEANS DON'T
					* PRESET THE I/O AREA
OEDA 0 C301		LD	3	1	NUMBER
0EDB 0 422A		BSI	2	SETV-TB	PRESET I/O AREA
0EDC 1 7402 08B8	WRTF	MDX	L	WRITE,2	CREATE NORMAL RETURN ADRS
					ISSUE WRITE THRU XEQ RTN
OEDE 0 423C	WRTA	BSI	2	XEQ-TB	ISSUE WRITE COMMAND
					IF NOCK NEGATIVE, DON'T CHECK FOR
					OSW ERRORS BUT EXIT AS IF NORMAL WRITE.
OE0F 0 C2FF		LD	2	NOCK-TB	GET NO CHECK SWITCH
OEEO 1 4C28 0F05		BN		WRTX2	IF NON-ZERO, EXIT
					CHECK FOR DSW ERRORS
OE02 0 C2C7		LD	2	ZSNS-TB	INTRPT OSW
OE03 1 4C10 OE09		BNN		WRTC	BRANCH IF NO ERROR
OE05 1 7401 088A	MOX	L		WRERR,1	INCR ERROR SWITCH
					PRINT OSW ERROR MSG
OE07 0 4230		BSI	2	STMSG-TB	CALL SET MSG RTN
OE08 0 5E0B		DC		/5E0B	MESSAGE ID
OE09 0 C20B		LD	2	WRERR-TB	GET ERROR SW
OE0A 0 4218		BSI	2	CKLK-TB	CK LOCK ON ERROR
OE0B 1 OE0E		OC		WRTA	RETURN ADRS IF ON
					LOCK ON ERROR SW IS OFF
OE0C 1 74FF 0889	MOX	L		WRTTY,-1	DECR RETRY CTR
OE0E 0 70EF	MDX			WRTA	LOOP-8 TIMES
					EIGHT RETRYS HAVE FAILED
					PRINT UNRECOVERABLE WRT
OE0F 0 C20B		LO	2	WRERR-TB	GET ERROR CNT
OEFO 0 0203		STO	2	M003-TB	SET FOR PRINT

2310 A/B FUNCTION TEST

```
OE1 0 4230      BSI 2 STMSG-TB  HARD WRITE ERROR      80921840
OE2 0 4E0C      DC   /4E0C      MESSAGE ID              80921850
*
OE3 0 630A      LOX 3 HRDWR-SUMRY  POINTER              80921860
OE4 0 4221      BSI 2 COUNT-TB   INCR HARD WRITE ERROR  80921870
OE5 0 C28C      LD   2 TERM-TB   GET FFFF              80921880
OE6 0 D246      STO 2 COMA&1-TB SET IN I/O AREA        80921890
OE7 0 4C00 0000 WRTE B L *-*   DSW ERROR EXIT          80921900
*
*               WRITE WAS SUCCESSFUL                    80921910
*               80921920
*               80921930
*               80921940
*               80921950
*               80921960
*               80921970
*               80921980
*               80921990
*               80922000
*               80922010
*               80922020
*               80922030
*               80922040
*               80922050
*               80922060
*               80922070
*               80922080
*               80922090
*               80922100
*               80922110
*               80922120
*               80922130
*               80922140
*               80922150
*               80922160
*               80922170
*               80922180
*               80922190
*               80922200
*               80922210
*               80922220
*               80922230
*               80922240
*               80922250
*               80922260
*               80922270
*               80922280
*               80922290
*               80922300
*               80922310
*               80922320
*               80922330
*               80922340
*               80922350
*               80922360
*               80922370
*               80922380
*               80922390
*               80922400
*               80922410
*               80922420
*               80922430
*               80922440
*               80922450
*               80922460
*               80922470
*               80922480
*               80922490
*               80922500
*               80922510

OE9 0 C20B      WRTC LD 2 WRERR-TB  ANY PREVIOUS ERRORS  80921940
OEFA 0 D2D3      STO 2 MOD3-TB   SET FOR PRINT          80921950
OEFB 1 4C18 OF03 BZ   WRTX      BRANCH IF NONE          80921960
OEFD 0 4218      BSI 2 CKLK-TB   ELSE CHECK LOCK-ON-ERR  80921970
OEFE 1 0EDE      DC   WRTA      RETURN ADRS IF ON        80921980
OEFF 0 6309      LDX 3 SFTWR-SUMRY  POINTER              80921990
OF00 0 4221      BSI 2 COUNT-TB   INCR SOFT WRITE ERROR  80922000
OF01 0 4230      BSI 2 STMSG-TB   RECOVERED ERROR        80922010
OF02 0 4A03      DC   /4A03      MESSAGE ID              80922020
*
OF03 1 7401 08B8 WRTX MDX 1 WRITE,1 INCR RETURN          80922030
OF05 0 C28C      LD   2 TERM-TB   GET FFFF              80922040
OF06 0 D246      STO 2 COMA&1-TB SET IN I/O AREA        80922050
OF07 1 4C80 08B8 B   I WRITE      EXIT                  80922060
*
*-----*
*
*               SUB-ROUTINE RNDOM                        80922070
*               80922080
*               80922090
*               80922100
*               80922110
*               80922120
*               80922130
*               80922140
*               80922150
*               80922160
*               80922170
*               80922180
*               80922190
*               80922200
*               80922210
*               80922220
*               80922230
*               80922240
*               80922250
*               80922260
*               80922270
*               80922280
*               80922290
*               80922300
*               80922310
*               80922320
*               80922330
*               80922340
*               80922350
*               80922360
*               80922370
*               80922380
*               80922390
*               80922400
*               80922410
*               80922420
*               80922430
*               80922440
*               80922450
*               80922460
*               80922470
*               80922480
*               80922490
*               80922500
*               80922510

OF09 1 4C04 OF10 RNDME BOD  RNDMB  IF ODD JUST COMPLEMENT 80922310
OF0B 0 F28C      EOR 2 TERM-TB   ELSE COMPLEMENT...     80922320
OF0C 0 A2C1      M   2 K259-TB   ** AND GENERATE NEW NUMB. 80922330
OF0D 0 1090      SLT 16          GET LOW ORDER 16 BITS    80922340
OF0E 1 4C80 08A6 RNDMX B I RNDOM EXIT                    80922350
*
OF10 0 F28C      RNDMB EOR 2 TERM-TB  COMPLEMENT NUMBER   80922360
OF11 0 70FC      B   RNDMX        AND EXIT                80922370
*
*-----*
*
*               ROUTINE TO CHECK FOR LOCK                80922380
*               ON ERROR OPTION                          80922390
*               80922400
*               80922410
*               80922420
*               80922430
*               80922440
*               80922450
*               80922460
*               80922470
*               80922480
*               80922490
*               80922500
*               80922510

**** ROUTINE CALL
* A REG = NUMBER
* BSI 2 RNDOM-TB
*
*-----*
*
OF09 1 4C04 OF10 RNDME BOD  RNDMB  IF ODD JUST COMPLEMENT 80922310
OF0B 0 F28C      EOR 2 TERM-TB   ELSE COMPLEMENT...     80922320
OF0C 0 A2C1      M   2 K259-TB   ** AND GENERATE NEW NUMB. 80922330
OF0D 0 1090      SLT 16          GET LOW ORDER 16 BITS    80922340
OF0E 1 4C80 08A6 RNDMX B I RNDOM EXIT                    80922350
*
OF10 0 F28C      RNDMB EOR 2 TERM-TB  COMPLEMENT NUMBER   80922360
OF11 0 70FC      B   RNDMX        AND EXIT                80922370
*
*-----*
*
*               ROUTINE TO CHECK FOR LOCK                80922380
*               ON ERROR OPTION                          80922390
*               80922400
*               80922410
*               80922420
*               80922430
*               80922440
*               80922450
*               80922460
*               80922470
*               80922480
*               80922490
*               80922500
*               80922510

**** ROUTINE CALL
* BSI 2 CKLK-TB
* DC   ADRS TO RETURN TO IF SW IS SET.
```

2310 A/B FUNCTION TEST

```
OF12 1 4C18 OF1C CKLKE BZ CKLK2 DON'T CK IF A REG. ZERO 80922520
OF14 1 C480 0897 LD I CKLK GET LOCK ADRS 80922530
OF16 0 D004 STO CKLK1+1 SET AS RETURN 80922540
OF17 0 1800 RTE 16 SET IN Q 80922550
OF18 0 C283 LD 2 SWO-TB GET SW FNC 0 80922560
OF19 0 108C SLT 12 CK FOR LOCK ON ERROR 80922570
OF1A 0 4C28 0000 CKLK1 BN L *-* BRANCH IF ON 80922580
OF1C 1 7401 0897 CKLK2 MDX L CKLK,1 INCR RETURN 80922590
OF1E 1 4C80 0897 BSC I CKLK EXIT SUB-ROUTINE 80922600
*
*-----*
*
CKPRE BZ CKPRA DON'T TEST IF ZERO 80922610
LD 2 SWO-TB GET FNC SW 00 80922620
SLA 10 BIT 10 80922630
BNN I CKPRT EXIT IF NOT SET 80922640
CKPRA MDX L CKPRT,1 BUMP RETURN 80922650
B I CKPRT. EXIT 80922660
*
*-----*
*
SUB-ROUTINE SETV 80922670
*
*-----*
*
**** ROUTINE CALL 80922680
*
* (A)=WORD TO BE PRESET IN I/O AREA 80922690
* BSI 2 SETV-TB 80922700
*
*-----*
*
SETVE LDX 13 COMA GET NO. WORDS TO BE READ 80922710
MDX 3 1 INCR BY ONE 80922720
SETVA STO L3 COMA&1 STORE WORD IN I/O AREA 80922730
MDX 3 -1 DECR COUNT 80922740
B SETVA LOOP 80922750
B I SETV EXIT 80922760
*
*-----*
*
PRINT SUMMARY TABLE 80922770
*
**** ROUTINE CALL 80922780
* BSI 2 TEXIT-TB 80922790
*
****ALTERNATE CALL 80922800
* BSC L DFTXT 80922810
*
THIS ROUTINE WILL PRINT THE SUMMARY TABLE 80922820
AND SET SW 15 IN FUNCTION ZERO. 80922830
*
*-----*
*
TERMINATE DFT 80922840
*
DFTXT LD 2 SWO-TB FUNCTION 00 80922850
OR 2 K1-TB SET BIT 15 TO TERMINATE 80922860
STO 2 SWO-TB * DFT PROGRAM 80922870
BSI 2 STMSG-TB TERMINATE DFT 80922880
DC /5A04 MESSAGE ID 80922890
PRSUM MDX L PSSCT,1 INCR PASS COUNT 80922900
LDX L1 /1001 FORM #/MID 80922910
STX 1 ID SET FOR CALL 80922920
LDX 1 3 SET LINE COUNT 80922930
LDX L3 SKCNT SET ADDRESS SUMRY TABLE 80922940
PRLN1 BSI PRSM1 PRINT ONE LINE 80922950
MDX 3 3 INCR ADRS POINTER 80922960
MDX 1 -1 DECR LINE COUNT 80922970
*
OF33 0 C283 80922980
OF34 0 EAE1 80922990
OF35 0 D283 80923000
OF36 0 4230 80923010
OF37 0 5A04 80923020
OF38 1 7401 086B 80923030
OF3A 0 6500 1001 80923040
OF3C 0 6921 80923050
OF3D 0 6103 80923060
OF3E 1 6700 086C 80923070
OF40 0 4013 80923080
OF41 0 7303 80923090
OF42 0 71FF 80923100
```

2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 18

```
OF43 0 70FC MDX PRLN1 LOOP-PRINT 3 LINES 80923210
OF44 0 6500 3D81 LOX L1 /3D01+/80 FORM #/MESSAGE ID 23211
OF46 0 6917 STX 1 IO SET FOR CALL 23220
OF47 0 400C BSI PRSM1 PRINT ONE LINE 23230
OF48 0 6500 6D81 LOX L1 /6D01+/80 FORM #/MSG ID
OF4A 0 6913 STX 1 IO SET FOR CALL
OF4B 0 6103 LOX 1 3 SET LINE COUNTER 80923240
OF4C 0 7301 MDX 3 1 SET AORS POINTER 80923250
OF4D 0 4006 PRLN3 BSI PRSM1 PRINT ONE LINE 23270
OF4E 0 7302 MDX 3 2 INCR AORS POINTER 80923280
OF4F 0 71FF MDX 1 -1 DECR LINE COUNTER 80923290
OF50 0 70FC MDX PRLN3 LOOP-PRINT 3 LINES 80923300
OF51 0 4220 BSI 2 STMLS-TB EXIT TO MONITOR 80923310
OF52 2 4C80 012E BSC 1 END TERMINATE DFT 80923320
OF54 0 0000 PRSM1 DC *-# SUBRTN ENTRY PT
OF55 0 C2EC LO 2 PSSCT-TB GET PASS COUNT 80923380
OF56 0 D2D3 STO 2 MOO3-TB SET IN MSG 80923390
OF57 0 C300 LD 3 0 GET MODIFIER WORD 80923400
OF58 0 D204 STO 2 MOD4-TB SET IN MSG 80923410
OF59 0 C301 LO 3 1 GET MODIFIER 80923420
OF5A 0 D2D5 STO 2 MOD5-TB SET IN MSG 80923430
OF5B 0 C302 LD 3 2 GET MODIFIER 80923440
OF5C 0 D206 STO 2 MOD6-TB SET IN MSG 80923450
OF5D 0 4230 BSI 2 STMSG-TB CALL PRINT ROUTINE 23460
OF5E 0 0000 ID OC *-# FORM/MSG ID 80923470
OF5F 0 C0FE LD ID GET MSG ID
OF60 0 EAC6 OR 2 H0080-TB DON'T PRINT PIO,MID
OF61 0 00FC STO ID PUT IT BACK
OF62 1 4C80 0F54 BSC 1 PRSM1 EXIT FROM RTN
```

* INCREMENT AN ENTRY IN THE SUMMARY. 80923540

* 80923550

* 80923560

***** 80923570

* IX 1 IS THE POSITION IN THE SUMMARY 80923580

* TABLE TO BE INCREMENTED. IF THE 80923590

* COUNT EXCEEDS 9999, THE COUNTER IS 80923600

* RESET TO ZERO SO THAT A MODULO 10,000 80923610

* IS SIMULATED. THIS IS TO RELIEVE 80923620

* PRINTOUT PROBLEMS. 80923630

* 80923640

* 80923650

* 80923660

* 80923670

* 80923680

* 80923690

* 80923700

* 80923710

* 80923720

* 80923730

* 80923740

* 80923750

***** 80923760

* 80923770

* 80923780

* 80923790

* 80923800

* 80923810

* 80923820

* 80923830

* 80923840

* 80923850

* 80923860

* 80923870

* 80923880

* 80923890

* 80923900

* 80923910

* 80923920

**** ROUTINE CALL

```
* BSI 2 STMSG-TB
* DC MSG ID
* MSG ID = FMM (WHERE)
```

COMMON MESSAGE SETUP RTN

```
THIS ROUTINE WILL BUILD THE
MESSAGE DESIRED AND CALL RTN
PRINT TO PRINT THE MESSAGE.
```

2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 18A

```
* F = FORM NUMBER 80923930
* MMM = MESSAGE ID 80923940
** BIT 8 MEANS DON'T PRINT PID MID,ETC. 23941
```

80923950

80924040

80924050

80924060

80924070

80924080

80924090

80924100

80924110

80924120

80924130

80924140

80924150

80924160

80924170

80924180

80924190

80924200

80924210

80924220

80924230

80924240

80924250

80924260

80924270

80924280

80924290

80924300

80924310

80924320

80924330

80924340

24350

24360

80924370

80924380

80924390

80924400

80924410

24411

80924420

80924430

80924440

80924450

80924460

80924470

80924480

80924490

80924500

80924510

80924520

80924530

80924540

80924550

80924560

80924600

80924610

80924620

80924630

80924640

80924650

80924660

80924670

FORM TABLE

```
FRMTB DC FORMO AORS OF RTN FORM 0
DC FORM1 1
DC FORM2 2
```

OF6D 0 6964

OF6E 0 6B65

OF6F 1 6580 08AF

OF71 0 C100

OF72 0 E2C6

OF73 0 1008

OF74 0 D2CE

OF75 0 C100

OF76 0 180C

OF77 0 000F

OF78 0 C100

OF79 0 EAC6

OF7A 0 F2C6

OF7B 0 1888

OF7C 0 1004

OF7D 0 1088

OF7E 0 0200

OF7F 1 7401 08AF

OF81 0 C2EB

OF82 1 4C20 0F01

OF84 0 6301

OF85 0 C2E2

OF86 0 6500 0000

OF88 1 4D80 0F8A

OF8A 1 0F95

OF8B 1 0F97

OF8C 1 0F98

2310 A/B FUNCTION TEST

```
OF80 1 OF99      OC      FORM3      3      80924680
OF8E 1 OF9A      OC      FORM4      4      80924690
OF8F 1 OF9C      OC      FORM5      5      80924700
OF90 1 OF9F      OC      FORM6      6      80924710
OF91 1 OFA2      OC      FORM7      7      80924720
OF92 1 OFB1      OC      FORM8      8      80924730
OF93 1 OFB3      OC      FORM9      9      80924740
OF94 1 OFB2      OC      FORMA     A      80924750
*
*
*      FORM IS 0
*
OF95 0 82E2      FORM0 A      2 K2-TB      INCR MOD CNT      80924760
OF96 0 7005      B          FORM5      COMMON ROUTINE      80924770
*
*      FORM IS 1
*
OF97 0 82E1      FORM1 A      2 K1-TB      INCR MOD CNT      80924780
*
*      FORM IS 2
*
OF98 0 82E1      FORM2 A      2 K1-TB      INCR MOD CNT      80924790
*
*      FORM IS 3
*
OF99 0 82E1      FORM3 A      2 K1-TB      INCR MOD CNT      80924800
*
*      FORM IS 4
*
OF9A 0 82E1      FORM4 A      2 K1-TB      INCR MOD CNT      80924810
OF9B 0 6306      LOX      3 6          SET CONVERSION CTR      80924820
*
*      FORM IS 5
*      COMMON ROUTINE
*
OF9C 0 EACE      FORM5 OR      2 MSGO-TB      SET MSG WORD COUNT      80924830
OF9D 0 02CE      STO      2 MSGO-TB      *      80924840
OF9E 0 701B      B          PRINT      PRINT      80924850
*
*      FORM IS 6
*
OF9F 0 82E3      FORM6 A      2 K3-TB      INCR MOD CNTR      80924860
OFA0 0 6302      LOX      3 2          SET CONVERSION CNTR      80924870
OFA1 0 70FA      B          FORM5      80924880
*
*      FORM IS 7
*
OFA2 0 C246      FORM7 LO      2 COMA+1-T8      GET DISK AORS READ      80924890
OFA3 0 403A      BS1      SECT      FORMAT FOR MSG      80924900
OFA4 0 0204      STO      2 MOO4-T8      SET CYL S/B IN MSG      80924910
OFA5 0 1800      RTE      16          SWAP A AND Q      80924920
OFA6 0 0206      STO      2 MOD6-T8      SET SECT S/B IN MSG      80924930
OFA7 0 C206      LO      2 10S#B-TB      GET OSK AORS S/B      80924940
OFA8 0 4035      BS1      SECT      FORMAT FOR MSG      80924950
OFA9 0 0203      STO      2 MOO3-TB      SET CYL WAS IN MSG      80924960
OFAA 0 1800      RTE      16          SWAP A AND Q      80924970
OFAB 0 D205      STO      2 MOO5-TB      SET SECT WAS IN MSG      80924980
OFAC 0 C200      LO      2 LNGTH-TB      GET RECORD LENGTH      80924990
OFAO 0 403E      BS1      BNOEC      CONVERT TO DECIMAL      80925000
OFAE 0 0207      STO      2 MOO7-TB      SET IN MSG      80925010
OFAF 0 C2E5      LO      2 K7-TB      SET MOD CNT      80925020
OFB0 0 70EB      B          FORM5      COMMON ROUTINE      80925030
*
*      FORM IS 8
*
OFB1 0 82E1      FORM8 A      2 K1-TB      SET WORD COUNT      80925040
*
*      FORM IS A
*
80925050
80925060
80925070
80925080
80925090
80925100
80925110
80925120
80925130
80925140
80925150
80925160
80925170
80925180
80925190
80925200
80925210
80925220
80925230
80925240
80925250
80925260
80925270
80925280
80925290
80925300
80925310
80925320
80925330
80925340
80925350
```

2310 A/B FUNCTION TEST

```
OFB2 0 82E2      *      FORMA A      2 K2-TB      SET WORD COUNT      80925360
*
*      FORM IS 9
*
OFB3 0 82E1      FORM9 A      2 K1-TB      INCR MOD CNT      80925370
OFB4 0 70E7      B          FORM5      COMMON ROUTINE      80925380
*
*      FORM IS 9
*
OFB5 1 C700 0851 MSGC1 LO      L3 FILE#      GET MODIFIER      80925390
OFB7 0 4034      BS1      BNOEC      CONVERT TO DECIMAL      80925400
OFB8 1 0700 0851 STO      L3 FILE#      SET IN MODIFIER      80925410
OFBA 0 73FF      PRINT MOX      3 -1          DECR CONVERSION CTR      80925420
OFBB 0 70F9      MOX      MSGC1      LOOP      80925430
OFBC 0 C200      PRINB LO      2 MSG10-T8      GET MSG 10      80925440
OFBD 0 1800      SRA      13          (NO MESSAGES WITH F)      80925450
OFBE 0 F2E5      EOR      2 K7-TB      BRANCH FOR ERROR MESSAGE      80925460
OFBF 1 4C18 OFCC BZ      PRINA      GET SW FNC 0      80925470
OFC1 0 C283      LO      2 SWO-TB      81T 13-BYPASS ALL LOGS      80925480
OFC2 0 1000      SLA      13          EXIT IF SET      80925490
OFC3 1 4C28 OF01 BN      STMSX      80925500
*
*      8SI 1 LOG      MONITOR LOG CALL      80925510
*      OC      MSGO      AORS MSG      80925520
*      OC      PRBSY      BUSY RETURN      80925530
*      OC      STMSX      MSG COMPLETE RETURN      80925540
*      BSC 1 START      EXIT TO MONITOR      80925550
*
*      PRINA BS1 1 ERROR      MONITOR ERROR CALL      80925560
*      OC      MSGO      AORS MSG      80925570
*      OC      PRBSY      BUSY RETURN      80925580
*      OC      PRLP      LOOP RETURN      80925590
*      STMSX LOX L1 *-*      RESTORE XR 1      80925600
*      LOX L3 *-*      RESTORE XR 3      80925610
*      B 1 STMSG      RETURN TO USER      80925620
*
*      PRINTER IS BUSY
*
OF07 0 4220      PRBSY BS1 2 STMLS-TB      EXIT TO MONITOR      80925630
OF08 0 70E3      B          PRINB      TRY AGAIN      80925640
*
*      LOOP ON ERROR RETURN
*
OF09 0 C281      PRLP LO      2 RIO-TB      GET PRESENT ROUTINE NUMBER      80925650
OFOA 1 4C18 OA89 BZ      PRECN      IF ZERO, GO TO PRE-CONTROL      80925660
OFOC 1 4C00 OAF8 B L CNTLO      ELSE LOOP SAME ROUTINE      80925670
*
*      ROUTINE TO FORMAT OSK AORS
*
OFOE 0 0000      SECT OC      *-*      SUB-ROUTINE ENTRY      80925680
OFOF 0 1883      SRT      3          POSITION      80925690
OFE0 0 0207      STO      2 MOO7-TB      SAVE CYL      80925700
OFE1 0 1010      SLA      16          SET HEAD IN CHAR 3      80925710
OFE2 0 1081      SLT      1          * AND SEC IN CHAR 4      80925720
OFE3 0 1002      SLA      2          *      80925730
OFE4 0 1082      SLT      2          *      80925740
OFE5 0 0208      STO      2 BNTMP-TB      SAVE HO/SECT      80925750
OFE6 0 C207      LO      2 MOO7-TB      GET CYL      80925760
OFE7 0 4004      BS1      BNOEC      CONVERT TO DEC      80925770
OFE8 0 0207      STO      2 MOO7-TB      STORE      80925780
OFE9 0 CA07      LOO      2 MOO7-TB      PUT HO/SECT IN Q      80925790
OFEA 1 4C80 OFOE BSC I SECT      EXIT SUB-ROUTINE      80925800
*
*      CONVERT A POSITIVE NUMBER IN THE
*      RANGE FROM 0-9999 TO IT'S DECI-
*      MAL EQUIVALENT.
*
80925810
80925820
80925830
80925840
80925850
80925860
80925870
80925880
80925890
80925900
80925910
80925920
80925930
80925940
80925950
80925960
80925970
80925980
80925990
80926000
80926010
```

2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 20

```
*
* ENTER ROUTINE WITH THE NUMBER
* IN THE A REGISTER. EXIT WITH
* THE CONVERTED NUMBER IN THE A REG.
*
OFEC 0 0000
OFF0 1 4CA8 OFEC
OFF1 0 1890
OFF2 0 AA13
OFF3 0 100C
OFF4 0 02CB
OFF5 0 1004
OFF6 0 AA12
OFF7 0 1008
OFF8 0 EACB
OFF9 0 D2CB
OFFA 0 1008
OFFB 0 AA11
OFFC 0 108C
OFFD 0 180C
OFFE 0 1084
OFFF 0 EACB
OFFF 1 4C80 OFEC

BNDEC OC
BN 1 BNOEC
SRT 16
0 2 THOUS-TB
SLA 12
STD 2 SNXIO-TB
SLA 4
0 2 HUNOR-TB
SLA 8
OR 2 SNXIO-TB
STD 2 SNXIO-TB
SLA 8
0 2 TEN-TB
SLT 12
SRA 12
SLT 4
DR 2 SNXIO-TB
8SC 1 BNOEC

ENTRY POINT
EXIT IF NEGATIVE
A TO Q
MOST SIGNIFICANT DIGIT
PDSITIDN DIGIT
SAVE
CLEAR A REG
PDSITIDN
COMBINE IN HEX WORD
SAVE
CLEAR A
COMBINE LAST TWO DIGITS
*
*
COMBINE IN HEX WORD
EXIT WITH WORD IN A REG.
*
*
PENDING EQU *-1 LAST PROGRAM ADDRESS
*****
END BEG INITIAL XFER ADDRESS
NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY
```

80926020
80926030
80926040
80926050
80926060
80926070
80926080
26090
80926100
80926110
80926120
26130
80926140
80926150
80926160
80926170
26180
80926190
80926200
80926210
80926220
80926230
80926280
80926290
26299
26300
80926310
80926320

2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 20A

```
ADCA 0894 ODD7 0EC3
ADDEF 0893 0A4C
AODIF 0895 0A55
ADZIP 0896 0A56
AVG 0C38 0C52 0C70 0C72 0C96
BADCY 081F 0A08 0012
BOCYL 0A30 0080 0D85 0087 0D90 00A9 00AC
BEG 0822 1000
BEGIN 012C 0822
BNDEC OFEC OFAD OF87 OFE7 OFED OFFE
BNTMP 0857 OFE5
CKLK 0897 0BC3 0BC9 0C1C 0C2C 0C45 0C4B 0C92 0D54 0D64 00BD 0E01 0E24 0EEA
0EF0 0F14 0F1C 0F1E
CKLKE 0F12 0898
CKLK1 0F1A 0F16
CKLK2 0F1C 0F12
CKPRA 0F26 0F20
CKPRE 0F20 089B
CKPRT 089A 08DE 0CA2 0E19 0E54 0E62 0E7E 0E8C 0EAD 0F24 0F26 0F28
CKR01 0CC0 0CCD
CKRD3 0CC9 0CCC
CMN1 0B94 0B9F
CMN2 0B92 0BA1
CMN3 0B9D 0BA4
CMP 0E34 0DFA 0E1D 0E6A 0E6C
CMPB 0E6E 0E41 0E73 0E88 0E9B 0E9F 0EA5
CMPB1 0E80 0E92
CMPB2 0E8B 0E7C
CMPB3 0E95 0E85
CMPB4 0E97 0E83 0E94
CMPB5 0E99 0E8A
CMPB6 0E9F 0E7F
CMPEX 0E6C 0E68
CMPTM 088C 0DE8 0E3D 0E42
CMPX 0E67 0E5F
CMP1 0E45 0E4D
CMP2 0E49 0E44 0EAA
CMP2A 0E90 0E8D
CMP3 0E58 0E3B 0E51 0E55
CMP4 0E66 0E63
CMRNO 0EA1 0E46
CMRN1 0EA4 0E48
CMRTB 0BBD 0BB6 0BBC
CMRTC 0BBF 0BAB
CMRTF 0BC8 0BC1
CMRTL 0BB3 0BC4 0BC6 0BCA
CMRT2 0BA9 0B99
CNTA 087C 0D33 0D66
CNTB 085B 0BE9 0BEF 0D34 0072
CNTL 0AE1 089E 0B3E 0BB2 0BCE 0BEA 0BF4 0BFA 0C33 0C50
CNTLB 0AEE 0AFA
CNTLO 0AF8 0AE6 0F0C
CNTLE 0890 0A73 0B3C 0B58 0B5B 0B68 0B8F 0BC7 0BCB 0BEE 0C2A 0C2E 0C49 0C40
0C9A 0D6F
COMA 08C4 0894 0A7E 0AC2 0ACF 0A06 0ADA 0B1C 0B41 0B42 0B47 0B51 0BB4 0B03
0C08 0C56 0C68 0C76 0C03 0038 007F 009A 0DE5 0E5A 0E5C 0E71 0E75
0EC9 0E06 0EF6 0F06 0F2A 0F20 0FA2
CDMPT 0811
CDUNA 0F67 0F6C
CDUNE 0F64 0BA1
COUNT 08A0 0036 0D59 006E 0076 00A4 0DB4 00EE 0E04 0E29 0ECB 0EF4 0F00 0F6A
CYL 0BB1 0BA9
CY000 0815 001C
CY001 0816
CY002 0817 0C77
CY003 0818
CY199 0819
CY200 081A
```

2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 21

CY201 081B
CY202 081C
OATA1 088B 08AC
OATA2 08C0 08AD
DOEF 0812 0893
O0EFX 083B 0A4E 0A4F 0A51 0CAC 0CB2 0CEE 0CF3
OFTXT 0F33 08B3 0ACB 0AE3
DSKMO 0842 0003
DVA 0826 0A5F 0B2B 0B30 0CB3 0CBA
END 012E 0A99 0F52
ENDCM 0A38
EPA 0808
ERCT 0881 0E36 0E4F 0E67 0E79 0E7A
ERROR 0130 0FCC
ERR1 0825 0B20
ERSK1 085A 0B00 0B0C 0BE7 0D31 0050 0058 0D63
FILE# 0851 0A52 0A66 0A92 0A93 0FB5 0FB8
FDRMA 0F82 0F94
FDRMO 0F95 0F8A
FDRM1 0F97 0F8B
FORM2 0F98 0F8C
FDRM3 0F99 0F8D
FDRM4 0F9A 0F8E
FORM5 0F9C 0F8F 0F96 0FA1 0FB0 0FB4
FDRM6 0F9F 0F90
FORM7 0FA2 0F91
FDRM8 0FB1 0F92
FORM9 0FB3 0F93
FRMTB 0FBA 0F88
FRNSK 0876 08B3
FRN1 087B 0C25
FRN2 087A
FSTND 0C30 0C03 0C20 0C6F 0C85
HCE0C 0A88 0AD0
HE5E5 084C 0B9D
HR0R0 0871 0E28
HROSK 086E 006D 0D75 0DB3
HROWR 0874 0EF3
HUNOR 0891 0FF4
H00A0 088E 0A91
H00B0 088F 0A8F
H0080 0845 0F60 0F72 0F79 0F7A
H1313 083E 0B92 0C57 0C6A
H3000 0830 0CC2 0CD7 0C08
ID 0F5E 0F3C 0F46 0F4A 0F5F 0F61
IDS#B 0885 000C 0E3F 0EC8 0FA7
INCR1 0870 0B5D 0B63 0B6E
INCR2 087E 0B5F 0B65 0B74
INDEX 0880 0E39 0E49 0E4B 0E58 0E6F 0E82 0E90 0E9A 0EB5
INTR 0827 0831
INTRB 0833 0829
INTSW 0825 0828 082E 0A85 0CB0 0CDE
IPA 0806
K1 0860 0A53 0A62 0AE9 0B2A 0B60 0BE1 0C73 0C78 0C80 0047 0E38 0E66 0E81
K10TH 0869 0E87 0E91 0F34 0F66 0F97 0F98 0F99 0F9A 0FB1 0FB3
K2 0861 0E5E 0F85 0F95 0FB2
K202 0866 0ABE
K203 0867 0B1D 0B66
K259 0840 0F0C
K27 0C5C 0C8A 0CA4
K3 0862 0AA5 0AAB 0ACC 0B35 0F9F
K331 0868 0C87
K370 0C62 0C53
K4 0863 0A8C 0ABC
K7 0864 007C 0093 0FAF 0FBE
KB 0865 0003 0D32 0DBA 0DEF 0ECC
LNGTH 087F 0DE6 0E3A 0E4C 0E99 0FAC

2310 A/B FUNCTION TEST

PART NO. 2196378
PAGE 21A

LDG 012F 0FC5
LPA 0807
LPCNT 0032 0AF3 0B7F 0B98 0CAB
LPRNT 0886 0E37 0E80 0EBA
LRN1 0879 0BF6 0C28
LRN2 087B 0BFB
LRTN 080E 0AFF
LSTND 0C2F 0BFF 0C02 0C06 0C09 0C10 0C27
MASK 083F 0AB3
MATO 0134
MLSCF 0809 082C 0A57 0A74 0CF9
MODEL 0880 0A80 0ABB 0B0E 0B17 003A
MO03 0852 0AB2 0B52 0BE8 0CBF 004B 0051 006A 0099 00AB 00C4 00F0 0E11 0E23
MD04 0853 0EB4 0F58 0FA4
MO05 0854 009C 00AE 0EB1 0F5A 0FAB
MO06 0855 0F5C 0FA6
MDD7 0856 0FAE 0FE0 0FE6 0FE8 0FE9
MSGC1 0FB5 0FBB
MSG10 084F 0F7E 0FBC
MSGO 084D 0F74 0F9C 0F90 0FC7 0FCE
NCYL# 0859 0B01 0D0F 0011 0018 001F 003D 0D49 009E 00DA
NLOOP 0CAB 0C98
NOCK 087E 00E2 00F4 0E03 0EDF
ONLIN 0810 0A96 0B27 0B30
PCYL# 0858 0AC4 0D3E 0069 0098 0D90 00C3 0EC6
PEN0 0FFF 080C
PIO 07FF 0824
PNTB 0EAB 0E96 0E98 0E9E 0EBE
PNTBX 0EBE 0EAE
PNTC 0EAF 0E78
PRBSY 0F07 0FC8 0FCF
PRECA 0AA1 0AB0
PRECB 0AAA 0AA6
PRECC 0AA3 0AA9
PRECF 0A0A 0AE0
PRECG 0A06 0AD1
PRECH 0AB9 0A97 0A9D 0AB4
PRECJ 0AC9 0AC8
PRECN 0A89 0A67 0F0A
PRINA 0FCC 0FBF
PRINB 0FBC 0FD8
PRINT 0FBA 0F9E
PRLN1 0F40 0F43
PRLN3 0F40 0F50
PRLP 0F09 0FD0
PRNSK 0877 0B82 0B85 0B87
PRSM1 0F54 0F40 0F47 0F40 0F62
PRSUM 0F38 0AEC
PRSW 086A 0A78 0BE2 0BE6 0F81
PSSCT 086B 0F38 0F55
RAO 0801 0A58 0A75 0AF2 0AF6
RCKX 0CA8 0C9F 0CA3
RCKX1 0CA6 0CAA
RDCHK 0843 0B04
ROCMP 085F 0006 00FE 0E0B 0E2E 0E53 0E61 0E8B 0EAC
ROCNT 086F 00ED
ROCPX 0E14 00EA 0E2D
RODSW 085E 00D5 00FC 0E10 0E16 0E17 0E22
RDEN 0DD3 08A4
RDER1 0E0B 00FB
RDER2 0E16 0DFB
RDER3 0E22 0E33
ROER4 0E2E 0E1E
RDNCK 0E09 00F5
ROR2B 0E1D 0E1A
REAO 08A3 0AC5 0ACD 0B45 0BBE 0B05 0C17 0C3B 0C61 0C74 0D70 00DD 0DEB 0E07
E09

A/B FUNCTION TEST

READA 00EF 0E02 0E25
READB 0DF1 0E0F 0E21 0E32
REA0X 0E07 0DFF 0E2B
RELDV 0132 0CF1
REQDV 0131 0CAF
RID 0800 0A77 0AE8 0AEA 0AEE 0AF8 0C21 0FD9
RLDVE 0CEE 08BF
RNOCK 0870 00E0 0E45
RNDMB 0F10 0F09
RNome 0F09 08A7
RNOMX 0F0E 0F11
RNOOM 08A6 0886 0C0D 0EA2 0F0E
RNOsk 081D 0880
RNOWR 081E 0C00 0C04
RQDV 0CAC 08C2
RTCNT 0888 0D04 00CF
RTNER 0888 0AF5 08C2 0BC8 0C1B 0C2B 0C44 0C4A 0C7B 0C80 0C91 0CA1 0CA5
RTN1 0B0E 0B00 0B3B
RTN1G 0B27 0B18 0B23
RTN1O 0B3A 0B28 0B36
RTN1Q 0B17 0B13
RTN1O 0BF8 0B09
RTN11 0C31 0B0A
RTN12 0C4E 0B0B
RTN13 0BA0 0B0C
RTN14 0BA2 0B0D
RTN2 0B3D 0B01
RTN2A 0B51 0B4D
RTN2B 0B59 0B54
RTN2O 0B4F 0B4A
RTN2L 0B40 0B5A
RTN3 0B5C 0B02
RTN3P 0B69 0B61 0B67 0B7B
RTN3Q 0B6D 0B7A
RTN3R 0B71 0B6F 0B73
RTN3S 0B73 0B72
RTN3T 0B77 0B6A 0B6D 0B75
RTN3U 0B79 0B78
RTN4 0B7F 0B03
RTN4A 0B85 0B8C 0B8E
RTN4B 0B87 0B84
RTN4C 0B8B 0B89 0B94 0BA7 0BB5
RTN5 0B90 0B04
RTN6 0B9A 0B05
RTN7 0BA5 0B06
RTN8 0BCC 0B07
RTN8A 0BE3 0BDA 0BE0
RTN8J 0BEF 0B08
RTN8L 0B01 0BE4
RTN8M 0B0E 0BF1
RTN8N 0BE1 0BDF
RTN9 0BF2 0B08
RTN9A 0C0B 0C0F
RTN9B 0C16 0C15
RTN9C 0C19 0C0A
RTN9E 0C2B 0C1A
RTN9L 0C04 0C10 0C1F 0C2D
RTRYA 085C 0DF0 0E0D 0E1F 0E2A
RTRYB 085D 0E30
RTTBL 0AFF 0AEB 0AF0 0AF9 0AFF
RT11A 0C3A 0C39
RT11B 0C3F 0C34
RT11C 0C4A 0C3E 0C43
RT11L 0C35 0C46 0C48 0C4C
RT12A 0C68 0C6E
RT12B 0C6F 0C6B
RT12D 0C85 0C79 0C84
RT12F 0C91 0C8B

2310 A/B FUNCTION TEST

RT12G 0C8D 0C88
RT12L 0C53 0C95
RT12Z 0C51 0C93
RT910 0BF0 0BF7
R12CK 0C9B 0C50 0C63 0C70 0C8E 0CA6 0CA8
S#B 0883 0E3E 0E40 0E43 0EA1 0EA3 0EA4 0EA6 0EA7 0EA8 0EA9 0EB2
SECT 0F0E 0FA3 0FA8 0FEA
SECTD 0C14 0B95 0BA8 0BB8 0BB8 0BF0 0C11 0C16
SEEK 0D30 0020 0023 0D2A 00A7 0DBE
SEEKA 0037 0055 0D65 0D68 0D74
SEEKB 0046 0D41
SEEKC 0D49 003B
SEEKD 004A 0045 0D48
SEEKF 0D5B 004E
SEEKG 0D70 0D5F
SETV 08A9 0C58 0DF2 0E0B 0F31
SETVA 0F20 0F30
SETVE 0F2A 08AA
SFTRD 0870 0E03
SFTSK 0860 0D58 0DA3
SFTWR 0873 0EFF
SKCNT 086C 0D35 0F3E
SMLNG 000C 0A3A
SNRES 0844 0A60 0CCE
SNXIO 084A 0A61 0A8A 0AA3 0AAA 0B2E 0CC0 0C01 005D 0FF2 0FF6 0FF7 0FFD
START 012D 0839 0CFA 0FCA
STMAO 0F6F
STML 0002 0CF8
STMLE 0CF7 08AD
STMLR 0CFC 0CF7 0D02
STMLS 08AC 0CB7 0CC9 0CDD 0CE9 0D00 0F51 0FD7
STMSA 0F86 0F77
STMSE 0F6D 08B0
STMSG 08AF 0837 0A6A 0A94 0AB6 0AD3 0AFC 0B15 0B25 0B38 0B4F 0B56 0BEC 0C5E
0C64 0C7E 0C8F 0CC5 0CDB 0CE4 0D56 0D61 0D6B 0D70 00A1 0DB1 00B6
0DBF 00CB 0E05 0E12 0E1B 0E26 0E56 0E64 0E8E 0EBC 0EE7 0EF1 0F01
0F36 0F5D 0F6F 0F7F 0F05
STMSX 0FD1 0F6D 0F6E 0F82 0FC3 0FC9
SUMRY 086A 0A3B 0035 0058 0D60 0075 00A3 0DB3 0DED 0E03 0E28 0ECA 0EF3 0EFF
0F64 0F67
SWO 0802 0A3F 0A42 0A70 0AE2 0F18 0F22 0F33 0F35 0FC1
SW1 0803 0AE5
SW2 0804 0A43
SW3 0805
TB 087F 0835 0837 0A3F 0A42 0A43 0A44 0A4C 0A4E 0A51 0A52 0A53 0A55 0A56
0A57 0A58 0A5B 0A5D 0A5E 0A5F 0A60 0A61 0A62 0A63 0A66 0A68 0A6A
0A6C 0A6E 0A70 0A73 0A74 0A75 0A77 0A7B 0A7C 0A83 0A85 0A8A 0A8B
0A8C 0A8D 0A8F 0A91 0A92 0A93 0A94 0A96 0AA3 0AA5 0AAA 0AAB 0AB2
0AB3 0AB6 0AB8 0AB9 0ABB 0ABC 0ABE 0ABF 0AC0 0AC1 0AC2 0AC4 0AC5
0AC9 0ACC 0ACO 0ACF 0A03 0A05 0AE2 0AE5 0AE8 0AE9 0AEA 0AF2 0AF5
0AF8 0AFC 0AFE 0B0E 0B10 0B11 0B15 0B17 0B1A 0B1C 0B1D 0B1E 0B1F
0B25 0B27 0B2A 0B2B 0B2C 0B20 0B2E 0B2F 0B30 0B31 0B32 0B33 0B35
0B38 0B3C 0B3D 0B40 0B41 0B45 0B49 0B4F 0B51 0B52 0B53 0B56 0B58
0B5B 0B60 0B66 0B68 0B70 0B76 0B80 0B82 0B83 0B85 0B86 0B87 0B8A
0B8F 0B92 0B9D 0BAE 0BB0 0BB3 0BB4 0BB9 0BBE 0BC2 0BC3 0BC7 0BC8
0BC9 0BCB 0BCC 0BD0 0BD1 0BD3 0BD4 0B05 0BD9 0BDE 0BE1 0BE2 0BE6
0BE7 0BE8 0BE9 0BEC 0BEE 0BF2 0BF6 0BF8 0BF8 0C00 0C04 0C0D 0C12
0C17 0C1B 0C1C 0C2A 0C2B 0C2C 0C2E 0C31 0C36 0C3B 0C40 0C44 0C45
0C49 0C4A 0C4B 0C4D 0C4E 0C56 0C57 0C58 0C5A 0C5E 0C61 0C64 0C6A
0C73 0C74 0C76 0C77 0C78 0C7B 0C7C 0C7E 0C80 0C81 0C86 0C87 0C8D
0C8F 0C91 0C92 0C99 0C9A 0C9C 0CA1 0CA2 0CA5 0CAC 0CB7 0CB9 0CBA
0CBB 0CBC 0CBD 0CBE 0CBF 0CC0 0CC1 0CC2 0CC5 0CC7 0CC8 0CC9 0CCE
0CCF 0C00 0CD1 0CD2 0CD3 0C06 0CD7 0CD8 0CDB 0CD0 0CDE 0CE4 0CE6
0CE7 0CE8 0CE9 0CEA 0CEB 0CEE 0CF9 0CFC 0003 0004 0D05 0D0F 0D11
0D1F 0D31 0032 0033 0D34 0D36 0037 0D38 0D3A 0D30 0D3E 0D46 0D47
0D49 0D4A 0D4B 0D4C 0050 0051 0D54 0D56 0D59 0D5D 0D61 0D63 0D64
0D69 0D6A 0D6B 006E 006F 0070 0076 0077 007C 0D7D 0D7F 0093 0D98
0099 0D9A 0D9C 0D9D 0D9E 0DA1 0DA4 0DAB 00AE 00B1 0DB4 0DB5 0DB6

2310 A/B FUNCTION TEST

0DB9 0DBA 0DB0 0DBF 0DC3 0DC4 0DC6 0DC7 0DCB 0003 00D5 0D06 0DD7
00D8 000A 0DDC 0DE0 0DE2 00E5 00E6 00E8 00EE 00EF 0DF0 0DF1 0DF2
0DF3 00F4 00F7 0DFC 0DFD 0DFE 0E01 0E04 0E05 0E10 0E11 0E12 0E16
0E19 0E1B 0E22 0E23 0E24 0E26 0E29 0E2A 0E36 0E37 0E38 0E39 0E3A
0E3D 0E3E 0E3F 0E40 0E42 0E43 0E45 0E48 0E4C 0E4F 0E50 0E53 0E54
0E56 0E5E 0E61 0E62 0E64 0E66 0E67 0E79 0E7E 0E80 0E81 0E82 0E87
0E8B 0E8C 0E8E 0E90 0E91 0E99 0E9A 0EA1 0EA2 0EA3 0EA4 0EA6 0EA7
0EA8 0EA9 0EAC 0EAO 0EB1 0EB4 0EBC 0ECO 0EC2 0EC3 0EC4 0EC6 0EC8
0EC9 0ECB 0ECC 0ECD 0ED3 0E06 0E08 0EDE 0EDF 0EE2 0EE7 0EE9 0EEA
0EEF 0EF0 0EF1 0EF4 0EF5 0EF6 0EF9 0EFA 0EFD 0F00 0F01 0F05 0F06
0F08 0F0C 0F10 0F18 0F22 0F33 0F34 0F35 0F36 0F51 0F55 0F56 0F58
0F5A 0F5C 0F5D 0F60 0F66 0F69 0F72 0F74 0F79 0F7A 0F7E 0F81 0F85
0F95 0F97 0F98 0F99 0F9A 0F9C 0F9D 0F9F 0FA2 0FA4 0FA6 0FA7 0FA9
0FAB 0FAC 0FAE 0FAF 0FB1 0FB2 0FB3 0FB8 0FBE 0FC1 0FD7 0FD9 0FE0
0FE5 0FE6 0FE8 0FE9 0FF0 0FF2 0FF4 0FF6 0FF7 0FF9 0FFD
TBDSW 0850 0834 0A44 0A8B 0B11 0B2F 0B33 0CC1 0CD2 0CD6 0CEB
TEN 0890 0FF9
TERM 080B 0AC1 0B10 0B40 0B53 0BB3 0CB4 0CF4 0046 0DC6 00F1 0EF5 0F05 0F0B
0F10
TEXT 0882 0A6C 0A88 0A05 0AFE 0CE7 0D77 0DB5
THOUS 0892 0FF0
TMPX 0078 007A 0D7B 0D8F 0D92
TSTCA 001C 0D2F
TSTCB 0D21 0D1B
TSTCC 0D24 0D22
TSTCD 0D28 0D25
TSTCE 0D2B 0D29
TSTCF 0D26 0D0B 0D14 0D2C
VERFA 0011 0D17
VERF8 0079 003F 0D52 0D5A 0DD1
VERFC 0D7A 0083
VERFD 0085 0D8D
VERFE 0D8F 0D97
VERFF 0DA8 0D02
VERFG 0DA9 0DB8
VERFH 0DB6 0D80
VERFI 0DB9 0D9F
VERFJ 0DCF 0D8A 0D94
VERFX 00C1 0006 0DB8
VERFY 08B5 0AC9 0B70 0B76 0B8A 0BB0 0BCC 0BF2 0BF8 0C31 0C4E 0D08 0D0C 0DC9
0DCD
VRFYE 0D03 0886
WOCTA 08BA 0BAA
WRCNT 0872 0ECA
WRERR 088A 0EC2 0EE5 0EE9 0EEF 0EF9
WRITE 08B8 08B9 0C12 0C36 0C40 0C5A 0C81 0ECE 0EDC 0F03 0F07
WRLNG 0875 0C99
WRMDD 0841 0ECO
WRRTY 0889 0005 00A5 0DB9 0ECD 0EEC
WRTA 0EDE 0EEB 0EEE 0EFE
WRTC 0EF9 0EE3
WRTF 0EF7 0ED1
WRTEN 0ECO 08B9
WRTF 0E0C 0ED8
WRTX 0F03 0EF8
WRTX2 0F05 0EE0
XEQ 08B8 0ACD 0B1F 0CEC 0D4C 0DF3 0EDE
XEQB 0CCE 0CC3
XEQE 0CB9 08BC
XEQLP 0C0D 0CD4 0CD9 0CE3
XEQX 0CE8 0CDF
XSKBK 083C 0AB9 0B1A 0D37
ZBUSY 0CB7 0CB1
ZCNT 0887 0CC8 0CCA 0CCF 0CE1
ZEP 0A7B 0808 0A86 0A89 0AA0 0AA4 0AAE 0AE1
ZIPA 0A38 0806 0A59
ZIP8 0A5B 0895
ZIPC 0A65 0A64

2310 A/B FUNCTION TEST

ZIPD 0A68 0895 0896
ZIPL 0A3B 0A3E
ZLPA 0A6D 0807 0A39 0A4B 0A4D 0A79
ZLPB 0A76 0A71
ZRL0V 08BE 0A5E 0A83 0CE6 0CE8 0CEF 0CF5
ZRQ0A 0CAF 0CB8
ZRQ0V 08C1 0A50 0CAD 0C85 0CBD
ZSNS 0846 082F 0830 0833 0A63 0B49 0B09 0C7C 0C86 0C9C 0CEA 00C7 00F7 0EE2
ZXID 0848 0ABF 081E 0B2C 0B2D 0B31 0B32 0C89 0C88 0CBE 0C00 004A 00D8 0EC4
END DF ASSEMBLY

----- LAST PAGE -----

TABLE OF CONTENTS

PARAGRAPH	PAGE
1. PURPOSE.	1
2. REQUIREMENTS	1
2.1 PROGRAM REQUIREMENTS	
2.2 EQUIPMENT REQUIREMENTS	
3. OPERATING PROCEDURE.	1
3.1 LOADING PROGRAM	
3.2 PROGRAM OPERATION	
3.3 HALTS	
3.4 TERMINATION	
4. PRINTOUTS.	2
4.1 STATUS MESSAGES	
4.2 ERROR MESSAGES	
5. COMMENTS	2A
6. APPENDIX	5
6.1 EDIT PROCEDURE	
6.2 SAMPLE PRINTOUTS	

1. PURPOSE

THE 1443 FUNCTION TEST IS DESIGNED TO CHECK THE OPERATING PERFORMANCE OF THE 1443 PRINTER AND TO AID IN ITS PROPER ADJUSTMENT.

2. PREREQUISITES

2.1 PROGRAM PREREQUISITES

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 2047 STORAGE WORDS.

2.2 EQUIPMENT PREREQUISITES

THE PROGRAM IS DESIGNED FOR USE WITH A 52 CHARACTER TYPE BAR. SEE SAMPLE PRINTOUTS FOR ALL SIZES OF TYPE BARS. A CARRIAGE TAPE WITH ALL CHANNELS PUNCHED EQUALLY SPACED IN NUMERICAL ORDER IS NECESSARY FOR THE CARRIAGE TEST ROUTINE. THE CHANNEL PUNCHES SHOULD BE SPACED FOUR OR MORE LINES APART ON THE CARRIAGE TAPE. ANY SUCH TAPE WILL WORK WELL. SEE TABLE 4 FOR A SUGGESTED CARRIAGE TAPE.

3. OPERATING PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. CLEAR STORAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS, IF DESIRED
5. SELECT PROGRAM OPTIONS, IF DESIRED, FROM -

TABLE 0 PROGRAM CONTROL FUNCTION
TABLE 1 ROUTINE SELECT FUNCTION
TABLE 2 DEVICE SELECT FUNCTION

6. INSTRUCT MONITOR TO EXECUTE

TABLE 0 CONTROL FUNCTION
(SEE SECTION 5.2)

*****	1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM *	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 *	3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15.
* 0 0 0 0 1 0 1 0 *	4. PRESS CONSOLE INTERRUPT.
* *****	

DATA ENTRY SWITCHES	DESCRIPTION
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *	
1.....	FORCE LOG OF STATUS MESSAGES
1.....	SINGLE CYCLE

TABLE 1 ROUTINE SELECT FUNCTION
(SEE SECTION 5.3)

*****	1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1.
* SENSE/PROGRAM *	2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
* 0 1 2 3 4 5 6 7 *	3. SET DESIRED ROUTINE IN DATA ENTRY SWITCHES 11-15.
* 0 1 0 0 1 0 1 0 *	4. PRESS CONSOLE INTERRUPT.
* *****	

DATA ENTRY SWITCHES	DESCRIPTION	
* 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 *		
1	1.. READY - NOT BUSY	RTN 1
1	0.. CONTINUITY	RTN 2
1	1.. CARRIAGE BUSY - NOT BUSY	RTN 3
1	0.. BIT LINE CHECK	RTN 4
1	0.. PARITY CHECK	RTN 5
1	1.. CYCLE STEAL PICKUP	RTN 6
1	1.. CYCLE STEAL DROP	RTN 7
1	0.. WORST CASE CORE A	RTN 8
1	0.. WORST CASE CORE B	RTN 9
1	0.. CHARACTER COMPLIMENT	RTN10
1	0.. REGISTRATION	RTN11
1	1.. STRESS TEST	RTN12
1	1.. CARRIAGE IMMEDIATE SPACE	RTN13
1	1.. CARRIAGE SPACE AFTER PRINTING	RTN14
1	1.. CARRIAGE IMMEDIATE SKIP	RTN15
0	0.. CARRIAGE SKIP AFTER PRINTING	RTN16

TABLE 2 DEVICE SELECT FUNCTION

```

*****
• SENSE/PROGRAM • 1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1.
• 0 1 2 3 4 5 6 7 • 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THROUGH 7.
• 1 0 0 0 1 0 1 0 • 3. SET DESIRED DEVICE NUMBER IN DATA ENTRY SWITCHES 0-15.
• • 4. PRESS CONSOLE INTERRUPT.
• SEE SECTION 5.4
*****
DATA ENTRY SWITCHES • DESCRIPTION
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 •
0..... TEST 1443 NUMBER ONE.
1..... TEST 1443 NUMBER TWO.
*****

```

3.3 PROGRAM HALTS
 THIS PROGRAM HAS NO HALTS.

3.4 PROGRAM TERMINATION
 A. STANDARD MONITOR TERMINATION
 B. PROGRAM WILL TERMINATE AFTER ONE COMPLETE PASS.

4. PRINTOUTS

4.1 STATUS MESSAGES
 STATUS MESSAGES ARE RECEIVED ONLY WHEN FORCE LOG OPTION IS USED.
 ALL STATUS MESSAGES ARE PRINTED IN ORDER OF OCCURANCE.

PID	M10	R10	RAD	DSW	
0A00	A001	000X	XXXX	XXXX	
		PRINTER READY-CARRIAGE NOT BUSY STATUS			
0A00	A002	000X	XXXX	XXXX	
		PRINTER READY STATUS			
0A00	A003	000X	XXXX	XXXX	
		CARRIAGE NOT BUSY STATUS			
0A00	A004	000X	XXXX	XXXX	
		CARRIAGE BUSY-PRINTER BUSY, NOT READY STATUS			
0A00	A005	000X	XXXX	XXXX	
		PRINTER BUSY, NOT READY STATUS			
0A00	A006	000X	XXXX	XXXX	
		CARRIAGE BUSY STATUS			
0A00	A007	000X	XXXX	XXXX	
		CARRIAGE CHANNEL STATUS			
0A00	A008	0005	XXXX	XXXX	
		OP COMPLETE PRINTER ERROR STATUS			
0A00	A009	000X	XXXX	XXXX	
		TRANSFER COMPLETE STATUS			

0A00 A00A 000X XXXX XXXX
 OP COMPLETE STATUS

0A00 A00B 0002 XXXX XXXX
 DSW AFTER WORD COUNT ZERO INITIALIZE WRITE.

4.2 ERROR MESSAGES
 ERROR MESSAGES INDICATE THE ACTUAL DSW AND WHAT THE DSW SHOULD HAVE BEEN. THESE ARE THE LAST TWO WORDS OF THE ERROR PRINTOUTS.
 IF MORE THAN ONE ERROR IS DETECTED PER LINE OF OUTPUT, THE ERRORS PRINTED ARE NOT NECESSARILY IN THE ORDER THEY WERE DETECTED.

PID	M10	R10	RAD	DSW	DSW SHOULD HAVE BEEN
0A00	E001	000X	XXXX	XXXX	XXXX
		ERROR ON CHECKING PRINTER READY,CARRIAGE NOT BUSY			
0A00	E002	000X	XXXX	XXXX	XXXX
		ERROR ON CHECKING PRINTER READY,NOT BUSY			
0A00	E003	000X	XXXX	XXXX	XXXX
		ERROR ON CHECKING CARRIAGE NOT BUSY			
0A00	E004	000X	XXXX	XXXX	XXXX
		CARRIAGE BUSY,PRINTER BUSY, NOT READY ERROR			
0A00	E005	000X	XXXX	XXXX	XXXX
		PRINTER BUSY,NOT READY ERROR			
0A00	E006	000X	XXXX	XXXX	XXXX
		CARRIAGE BUSY ERROR			
0A00	E007	000X	XXXX	XXXX	XXXX
		CARRIAGE CHANNEL ERROR			
0A00	E008	0005	XXXX	XXXX	XXXX
		OP COMPLETE DSW ERROR (PRINTING BAD PARITY CHARACTERS)			
0A00	E009	000X	XXXX	XXXX	XXXX
		TRANSFER COMPLETE DSW ERROR			
0A00	E00A	000X	XXXX	XXXX	XXXX
		OP COMPLETE DSW ERROR			
0A00	E00B	0002	XXXX	XXXX	XXXX
		WORD COUNT ZERO TRANSFER COMPLETE DSW ERROR. (THE DSW IMMEDIATELY AFTER THE X10 INITIALIZE WRITE COMMAND)			
0A00	E00C	000X	XXXX	0000	
		FALSE INTERRUPT DSW			
0A00	E00D	000X	XXXX	8000	
		LOST TRANSFER COMPLETE INTERRUPT			
0A00	E00E	000X	XXXX	2000	
		LOST PRINTER COMPLETE INTERRUPT			

5. COMMENTS
 THE 1443 FUNCTION TEST CONSISTS OF SIXTEEN ROUTINES. IN THE PREFERRED MODE (THAT IS, WHEN NO OPTIONS HAVE BEEN SELECTED), ALL ROUTINES WILL BE RUN IN ORDER.

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
1443 FUNCTION TEST

PART NO. 2196384
PAGE 3

5.1 THE PREFERRED MODE

WHEN NO OPTIONS ARE SPECIFIED BY THE OPERATOR THE PROGRAM WILL TEST 1443 NUMBER ONE. IF THE OPTIONAL SECOND 1443 IS TO BE TESTED IT MUST BE SELECTED (TABLE 2).

ALL ERRORS DETECTED WILL BE PRINTED IMMEDIATELY AFTER THE LINE WHERE IT WAS DETECTED. THE ERRORS ARE NOT NECESSARILY PRINTED IN THE ORDER DETECTED IF MORE THAN ONE PER LINE IS RECEIVED.

SHOULD THE OPERATOR WISH TO KNOW THE STATUS OF THE DEVICE AT SEVERAL TIMES DURING THE PRINT CYCLE, FORCE LOG OPTION SHOULD BE SPECIFIED. ALL LOG MESSAGES ARE PRINTED IN ORDER OF OCCURANCE.

5.2 CONTRCL OPTIONS

A. SINGLE CYCLE

THIS OPTION WILL CAUSE THE 1443 TO TAKE A SINGLE PRINT CYCLE AND THEN HALT IN THE ROUTINE BEING EXECUTED. ALL OTHER PROGRAMS MAY CONTINUE TO RUN. THIS OPTION PROVIDES THE ABILITY TO SINGLE CYCLE THROUGH EACH LINE OF PRINT IN ANY ROUTINE.

B. FORCE LOG

THE FORCE LOG OPTION CAUSES OUTPUT OF THE DEVICE STATUS AFTER EACH LINE OF PRINT. THE DEVICE STATUS IS PRINTED IN THE ORDER DETECTED DURING THE LAST PRINT CYCLE.

5.3 ROUTINE SELECT OPTION

IF OTHER THAN THE BASIC ROUTINES ARE TO BE RUN OR IF A DIFFERENT ORDER OF ROUTINES IS DESIRED, THE OPERATOR MUST SPECIFY THE ROUTINE TO BE RUN AS IN TABLE 1. THE ROUTINE SPECIFIED AT LAST ENTRY WILL BE REPEATED UNTIL THIS OPTION IS CHANGED. WHEN THIS OPTION IS ZEROED THE REST OF THE ROUTINES WILL BE RUN IN SEQUENCE.

5.4 DEVICE SELECT OPTION

THIS OPTION NEED BE SPECIFIED ONLY IF THE SECONO 1443 IS TO BE TESTED. ONLY ONE 1443 IS TESTED AT A TIME. THIS OPTION MUST BE SPECIFIED BEFORE PROGRAM EXECUTION.

5.5 THE ROUTINES

A. ROUTINE 1

THE READY-NOT BUSY ROUTINE ASSURES THAT THE 1443 CAN BE MADE READY AND NOT BUSY THEN PRINTS A BLANK LINE SPACE SUPPRESSED. THE PRINTER SHOULD GO BUSY-NOT READY AND RETURN READY-NOT BUSY WHEN THE PRINTER COMPLETE INTERRUPT IS RECEIVED.

B. ROUTINE 2

THE CONTINUITY ROUTINE CHECKS THE CONTINUITY OF TRANSFER CIRCUITS THIS ROUTINE PRINTS WITH A WORD COUNT OF ZERO. TRANSFER COMPLETE SHCULD BE REQUESTED IMMEDIATELY IF THERE IS CONTINUITY BETWEEN THE PROCESS CONTROLLER AND THE 1443 ATTACHMENT. PRINTER COMPLETE INTERRUPT WILL BE REQUESTED WHEN THE 1443 BUFFER ADDRESS REACHES 197. IF NO PRINTER COMPLETE HAPPENS THE CONTINUITY BETWEEN THE 1443 AND ITS ATTACHMENT MAY BE QUESTIONED.

C. ROUTINE 3

THE CARRIAGE BUSY-NOT BUSY ROUTINE CHECKS THAT THE CARRIAGE BUSY INDICATOR FUNCTIONS PROPERLY. THIS IS ACCOMPLISHED BY ISSUEING SUCCESSIVE SPACE IMMEDIATE CONTROL COMMANDS.

CATE 28FEB66 04NOV66
EC NO. 415120 415233

PROG ID 080A--
PAGE 3

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
1443 FUNCTION TEST

PART NO. 2196384
PAGE 3A

D. ROUTINE 4

THE BIT LINE ROUTINE PRINTS DATA IN ITS SIMPLEST FORM TO CHECK THE CONTINUITY OF THE PRINT CIRCUITS. ONLY SINGLE BIT CHARACTERS ARE PRINTED. THE DATA IS ROTATED THROUGH ALL PRINT POSITIONS.

E. ROUTINE 5

THE PARITY ROUTINE PRINTS SINGLE BIT CHARACTERS HAVING BAD PARITY TO CHECK THE PRINTER ERROR CIRCUITS. ONLY ONE BAD PARITY CHARACTER IS PRINTED PER LINE.

F. ROUTINE 6

THE CYCLE STEAL PICK-UP ROUTINE CHECKS THAT THE NUMBER OF CYCLE STEALS TO THE PRINTER DOES NOT EXCEED THE WORD COUNT. WHEN THE 1443 BUFFER ADDRESS REACHES 197, CYCLE STEALS ARE TERMINATED AND A PRINT CYCLE IS INITIATED. THE TRANSFER COMPLETE INTERRUPT IS A RESULT OF THE WORD COUNT REGISTER GOING TO ZERO. A WORD COUNT OF 98 SHOULD ALLOW THE PRINTER TO OPERATE NORMALLY. IF THE WORD COUNT REG FAILS TO DECREMENT OF AN EXTRA WORD IS SENT TO THE 1443, THE LINE PRINT CYCLE WILL START BEFORE WORD COUNT ZERO AND WILL BE DETECTED BY LOSS OF THE TRANSFER COMPLETE INTERRUPT.

G. ROUTINE 7

THE CYCLE STEAL DROP ROUTINE CHECKS TO SEE THAT NO CYCLE STEALS ARE DROPPED BY SPECIFYING A WORD COUNT OF 99. THIS ROUTINE SHOULD NOT DETECT A TRANSFER COMPLETE INTERRUPT. (SEE ROUTINE 5)

H. ROUTINES 8 AND 9

THE WORST CASE CORE ROUTINES CHECKS THE PRINTER CIRCUITS BY SPECIFYING CORE PATTERNS TO PLACE WORST CASE NOISE ON THE PRINTER CIRCUITRY.

I. ROUTINE 10

THE CHARACTER COMPLIMENT ROUTINE PRINTS EACH CHARACTER IN EVERY PRINT POSITION.

J. ROUTINE 11

THE REGISTRATION TEST PRINTS A FIELD OF I'S SUPERIMPOSED ON A FIELD OF H'S. THIS ROUTINE CAN BE USED AS AN AID IN ADJUSTING THE PRINT MAGNETS.

K. ROUTINE 12

THE STRESS TEST PRINTS THE 52 CHARACTER TYPE BAR IMAGE THUS IMPOSING A WORST CASE STRESS CONDITION ON THE TYPE BAR DRIVE MECHANISM.

L. ROUTINES 13, 14, 15 AND 16

THE CARRIAGE TEST ROUTINES CHECK THE FOUR CARRIAGE FUNCTIONS NOT PREVIOUSLY TESTED. THESE ARE SPACING IMMEDIATELY, SPACING AFTER PRINTING, SKIPPING TO CHANNEL IMMEDIATELY AND SKIPPING TO CHANNEL AFTER PRINTING, RESPECTIVELY. IF THE CHANNEL PUNCHES ARE EQUALLY SPACED AND PUNCHED IN ORDER (1 THROUGH 12) ON THE CARRIAGE TAPE, THEN ALL ROUTINES WILL INDICATE THE PROPER SPACING BY THE ALIGNMENT OF THE SLASH ON THE PRINTOUT. ROUTINE 13 HAS ONE MORE SPACE BETWEEN LINES THAN DOES ROUTINE 14 DUE TO THE NORMAL SPACE AFTER PRINTING.

CATE 28FEB66 04NOV66
EC NO. 415120 415233

PROG ID 080A--
PAGE 3A

F
L

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
1443 FUNCTION TEST

PART NO. 2196384
PAGE 4

TABLE 4 A SUGGESTED CARRIAGE TAPE

TAPE COLUMN	CHANNEL PUNCH
1	1
8	2
15	3
22	4
29	5
36	6
43	7
50	8
57	9
64	10
71	11
78	12
85	END OF TAPE

DATE 28FEB66 04NOV66
EC NO. 415120 415233

PROG ID 080A-
PAGE 4

SAMPLE PRINTOUT

NOTE: THIS SAMPLE PRINTOUT ILLUSTRATES A 52 CHARACTER TYPEBAR.

81T LINE

[illegible]

PARITY

Figure 1 is a line graph showing the relationship between the number of generations (n) on the x-axis and the number of particles (N) on the y-axis. The x-axis ranges from 0 to 10, and the y-axis ranges from 0 to 10. Two data series are plotted: 'without selection' (the upper curve) and 'with selection' (the lower curve). Both series start at $(0, 1)$. The 'without selection' series increases to approximately 10 at $n=10$, while the 'with selection' series increases to approximately 5 at $n=10$. The curves are labeled 'without selection' and 'with selection' respectively.

SAMPLE PRINTOUT (CONT.)

NOTE: THIS SAMPLE PRINTOUT ILLUSTRATES A 52 CHARACTER TYPEBAR.

CYCLE STEAL PICK-UP

[illegible]

CYCLE STEAL DROP

[illegible]

WORST CASE CORE A

[illegible]

WORST CASE CORE 8

[illegible]

1443 FUNCTION TEST

SAMPLE PRINTOUT (CONT.)

NOTE: THIS SAMPLE PRINTOUT ILLUSTRATES A 52 CHARACTER TYPEBAR.

[illegible]

1443 FUNCTION TEST

SAMPLE PRINTOUT (CONT.)

NOTE: THIS SAMPLE PRINTOUT ILLUSTRATES A 52 CHARACTER TYPEBAR.

SPACE IMMEDIATE

SPACE	1	EEE /
SPACE	1	EEE /
SPACE	1	EEE /
SPACE	2	EEE /
SPACE	2	EEE /
SPACE	2	EEE /
SPACE	3	EEE /
SPACE	3	EEE /
SPACE	3	EEE /
SPACE	1	EEE /
SPACE	1	EEE /
SPACE	1	EEE /
SPACE	2	EEE /
SPACE	2	EEE /
SPACE	2	EEE /
SPACE	3	EEE /
SPACE	3	EEE /
SPACE	3	EEE /

SPACE AFTER PRINT

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196384
PAGE 9

1443 FUNCTION TEST
SKIP IMMEDIATE

SAMPLE PRINTOUT (CONT.)
CHANNEL 1 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 2 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 3 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEF /

CHANNEL 4 EEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 5 EEEEEEEEEEEEEEE /

CHANNEL 6 EEEEEEE /

CHANNEL 7 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 8 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 9 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 10 EEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 11 EEEEEEEEEEEEEEE /

CHANNEL 12 EEEEEEE /

NOTE: THIS SAMPLE PRINTOUT ILLUSTRATES A 52 CHARACTER TYPEBAR.

DATE 28FEB66 4NOV66
EC NO. 415120 415233

PROG ID 080A-0
PAGE 9

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196384
PAGE 9A

1443 FUNCTION TEST
SKIP AFTER PRINT

SAMPLE PRINTOUT (CONT.)
CHANNEL 1 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 2 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 3 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 4 EEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 5 EEEEEEEEEEEEEEE /

CHANNEL 6 EEEEEEE /

CHANNEL 7 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 8 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 9 EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 10 EEEEEEEEEEEEEEEEEEEEEEE /

CHANNEL 11 EEEEEEEEEEEEEEE /

CHANNEL 12 EEEEEEE /

NOTE: THIS SAMPLE PRINTOUT ILLUSTRATES A 52 CHARACTER TYPEBAR.

DATE 28FEB66 4NOV66
EC NO. 415120 415233

PROG ID 080A-0
PAGE 9A

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196382
PAGE 1

1443 FUNCTION TEST

```
*****
012C 0 BEGIN EQU 300
012D 0 START EQU BEGIN&1
012E 0 END EQU START&1
012F 0 LDG EQU END&1
0130 0 ERROR EQU LDG&1
0131 0 REQOV EQU ERRDR&1
0132 0 RELOV EQU REQDV&1
*****
07FF ORG *E2047
*****
07FF 0 0A00 PID DC /0A00 PRDGRAM ID
0800 0 0000 RID DC 0 RDUTINE ID
0801 0 0000 RAD DC 0 RDUTINE ADDRESS
0802 0 0000 SW0 DC 0 CDNTRDL
0803 0 0000 SW1 DC 0 RDUTINE SELECT
0804 0 0000 SW2 DC 0
0805 0 0000 SW3 DC 0
0806 1 0894 DC AGAIN INITIALIZATION ADDR
0807 1 0894 DC AGAIN LDDP PRDGRAM ADDR
0808 1 0E2E DC ENDIT END PRDGRAM ADDRESS
0809 0 0000 MLSCF DC /0000 CDNTRDL FIELD
080A 0 FFFF TERM DC /FFFF
080B 1 0FFD DC PEND LAST PRDGRAM ADDRESS
080C 0 0000 DC 0
080D 0 0000 DC 0
080E 0 0000 DC 0
080F 0 0000 DNLIN DC *- DN LINE SWITCH
0810 0 0002 CDMP DC 2 CDMPATIBILITY SWITCH
*****
0811 0 FFFF DDEF1 DC /FFFF 1443 DEFINITION
0812 0 FFFF DDEF2 DC /FFFF 1443 DEFINITION
0813 0 0078 SIZE DC 120 PRINTER SIZE
0814 0 0034 BAR DC 52 TYPE BAR SIZE
0816 0008 BSS E 8
*****
081E 1 081E DST DC DST 00
081F 0 0000 RPCNT DC /0000 1
0820 0 0000 CYCNT DC 0 CYCLE COUNTER 02
0821 0 0000 WACNT DC 0 WAIT COUNTER 03
*****
0822 0 0000 DSW1 DC 0 1443 READY DSW 04
0823 0 0000 DC 0 DSW S/B 05
0824 0 0000 DC /0000 EXPECTED 06
0825 0 E3FF DC /E3FF MASK 07
*****
0826 0 0000 DSW2 DC 0 PRINTER READY DSW 08
0827 0 0000 DC 0 DSW S/B 09
0828 0 0000 DC /0000 EXPECTED 0A
0829 0 E3FB DC /E3FB MASK 0B
*****
082A 0 0000 DSW3 DC 0 CARRIAGE READY DSW 0C
082B 0 0000 DC 0 DSW S/B 0D
082C 0 0000 DC /0000 EXPECTED 0E
082D 0 E3FC DC /E3FC MASK 0F
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196382
PAGE 1A

1443 FUNCTION TEST

```
082E 0 0000 DSW4 DC 0 1443 BUSY DSW 10
082F 0 0000 DC 0 DSW S/B 11
0830 0 0007 DC /0007 EXPECTED 12
0831 0 E3FF DC /E3FF MASK 13
*****
0832 0 0000 DSW5 DC 0 PRINTER BUSY DSW 14
0833 0 0000 DC 0 DSW S/B 15
0834 0 0003 DC /0003 EXPECTED 16
0835 0 E3FB DC /E3FB MASK 17
*****
0836 0 0000 DSW6 DC 0 CARRIAGE BUSY DSW 18
0837 0 0000 DC 0 OSW S/B 19
0838 0 0004 DC /0004 EXPECTED 1A
0839 0 E3FF DC /E3FF MASK 1B
*****
083A 0 0000 DSW7 DC 0 CARRIAGE STATUS 1C
083B 0 0000 DC 0 DSW S/B 1D
083C 0 0000 DC /0000 EXPECTED 1E
083D 0 FFF8 DC /FFF8 MASK 1F
*****
083E 0 0000 DSW8 DC 0 PRINTER ERRDR DSW 20
083F 0 0000 DC 0 OSW S/B 21
0840 0 6001 DC /6001 EXPECTED 22
0841 0 E3FB DC /E3FB MASK 23
*****
0842 0 0000 DSW9 DC 0 XFER COMPLETE DSW 24
0843 0 0000 DC 0 DSW S/B 25
0844 0 B000 DC /8000 EXPECTED 26
0845 0 A3F8 DC /A3F8 MASK 27
*****
0846 0 0000 DSWA DC 0 PTR COMPLETE DSW 28
0847 0 0000 DC 0 DSW S/B 29
0848 0 2000 DC /2000 EXPECTED 2A
0849 0 E3FB DC /E3FB MASK 2B
*****
084A 0 0000 DSWB DC 0 DSW S/B 2C
084B 0 0000 DC 0 DSW S/B 2D
084C 0 8007 DC /8007 EXPECTED 2E
084D 0 E3FB DC /E3FB MASK 2F
*****
084E 0 0000 DSWC DC 0 FALSE INTERRUPT 30
084F 0 0000 DC 0 DSW S/B 31
0850 0 0000 DC 0 EXPECTED 32
0851 0 0000 DC 0 MASK 33
*****
0852 0 0000 DSWD DC 0 LDST TRANSFER CMPLT 34
0853 0 0000 DC 0 * INTERRUPT 35
0854 0 0000 DC 0 36
0855 0 0000 DC 0 37
*****
0856 0 0000 DSWE DC 0 LDST PRINTER CMPLT 38
0857 0 0000 DC 0 * INTERRUPT 39
0858 0 0000 DC 0 3A
0859 0 0000 DC 0 3B
*****
085A 0 0000 CNTRL DC 0 CONTRDL IDCC 3C
085B 0 0400 DC /0400 3D
085C 1 0F14 WRITE DC BITS INITIALIZE WRITE 3E
085D 0 0500 DC /0500 * IDCC 3F
*****
085E 0 0000 XFDSW DC 0 XFER CMPLT DSW 40
085F 0 0700 SENS DSW - NO RESET 41
0860 0 0000 PRDSW DC 0 PTR CMPLT DSW 42
0861 0 0701 SENS DSW - RESET 43
*****
0862 0 0000 SWCMP DC /0000 SWO CMPARE WORD 44
0863 0 0400 K0400 DC /0400 CONSTANT 45
```

DATE 04NDV66 15JUN68 14NDV69 20MAR70
EC NO. 415233 411935 431319 431320PRDG ID 080A-1
PAGE 1DATE 04NDV66 15JUN68 14NDV69 20MAR70
EC NO. 415233 411935 431319 431320PRDG ID 080A-1
PAGE 1A

1443 FUNCTION TEST

```
0939 1 4400 OCAC      BSI L PRINT      PRINT ONE LINE
093B 0 610A          LDX 1 10
093C 1 4400 OD3A      BSI L CKPTR      CK PRINTER COMPLETE
093E 1 4400 ODC2      BSI L ERRIT      PRINT ANY ERRORS
0940 1 4400 OD93      BSI L LOGIT      LOG ANY MESSAGES
0942 1 74FF 0820      MDX L CYCNT,-1    SKIP IF RTN DONE
0944 0 70F0          MDX      RT01A
0945 1 4C00 08E0      BSC L PCON      EXIT TO NEXT ROUTINE
```

ROUTINE THREE

CARRIAGE BUSY

THIS ROUTINE CHECKS THAT
THE CARRIAGE BUSY
INDICATOR FUNCTIONS
PROPERLY

```
0947 0 6103          RT02 LDX 1 3
0948 1 4400 OC50      BSI L PTROY      CK CARRIAGE READY

094A 0 C251          LD 2 SPAC1-DST    SET TO SINGLE SPACE
094B 0 D23C          STO 2 CNTRL-OST
```

```
094C 0 6104          LDX 1 4
0940 1 4400 OC95      BSI L FORMS      PERFORM SPACING
094F 0 610A          LDX 1 10
0950 1 4400 OD3A      BSI L CKPTR      GO CK PRNTR

0952 1 4400 ODC2      BSI L ERRIT      PRINT ANY ERRORS
0954 1 4400 OD93      BSI L LOGIT      LOG ANY MESSAGES
0956 1 74FF 0820      MDX L CYCNT,-1    SKIP IF DONE
0958 0 70EE          MDX      RT02
0959 1 4C00 08E0      BSC L PCON
```

ROUTINE FOUR

BIT LINE

THIS ROUTINE CHECKS THE
ABILITY OF THE 1443 TO
RECEIVE AND PRINT DATA
IN ITS SIMPLEST FORM.
SINGLE BIT CHARACTERS
ARE ROTATED THROUGH ALL
PRINT POSITIONS.

```
095B 1 4400 OCCC      RT03 BSI L SEBIT      SET UP HEADING
095D 0 0005          OC 5
095E 1 0E49          DC BLINE
095F 0 0005          DC 5

0960 1 4400 OC7B      BSI L HDNG      PRINT HEADING

0962 1 4400 OCCC      BSI L SEBIT      SET UP ROUTINE DATA
0964 0 0090          DC 144
0965 1 0E4D          OC BILK
0966 0 0007          OC 7

0967 0 C2F5          LD 2 SIZE-OST
```

80A04100
80A04110
80A04120
80A04130
80A04140
80A04150
80A04160
80A04170
80A04180
80A04190
80A04200
80A04210
80A04220
80A04230
80A04240
80A04250
80A04260
80A04270
80A04280
80A04290
80A04300
80A04310
80A04320
80A04330
80A04340
80A04350
80A04360
80A04370
80A04380
80A04390
80A04400
80A04410
80A04420
80A04430
80A04440
80A04450
80A04460
80A04470
80A04480
80A04490
80A04500
80A04510
80A04520
80A04530
80A04540
80A04550
80A04560
80A04570
80A04580
80A04590
80A04600
80A04610
80A04620
80A04630
80A04640
80A04650
80A04660
80A04670
80A04680
80A04690
80A04700
80A04710
80A04720
80A04730
80A04740
80A04750
80A04760
80A04770

1443 FUNCTION TEST

```
0968 0 1801          SRA 1
0969 1 D400 OF14      STO L BITS
096B 0 630E          LDX 3 14
096C 1 6F00 0820      STX L3 CYCNT
096E 1 4400 OCB9      RT03A BSI L RDTA      ROTATE OUTPUT CHARS
0970 0 6102          LDX 1 2
0971 1 4400 OC50      BSI L PTRDY      CHECK PRINTER READY
0973 1 4400 OCAC      BSI L PRINT      PRINT LINE
0975 0 6109          LDX 1 9
0976 1 4400 OD14      BSI L CKXFR      CHECK TRANSFER CMPLT
0978 0 610A          LDX 1 10
0979 1 4400 OD3A      BSI L CKPTR      CHECK PRINTER CMPLT
097B 1 4400 ODC2      BSI L ERRIT      PRINT ANY ERRORS
097D 1 4400 OD93      BSI L LDGIT      LOG ANY MESSAGES
097F 1 74FF 0820      MDX L CYCNT,-1    SKIP IF RTN DONE
0981 0 70EC          MDX      RT03A
0982 1 4C00 08E0      BSC L PCON      EXIT TO NEXT ROUTINE
```

```
*****
```

ROUTINE FIVE

PARITY CHECK

THIS ROUTINE CHECKS THAT
THE PRINTER CIRCUITRY
WILL RESPOND TO BAD
PARITY CHARACTERS.

```
0984 1 4400 OCCC      RT04 BSI L SEBIT      SET UP HEADING
0986 0 0003          DC 3
0987 1 0E54          DC PAR
0988 0 0003          DC 3
```

```
0989 0 1810          SRA 16      INITIALIZE PARITY
098A 0 92EC          S 2 TERM-DST * DATA GENERATION
098B 0 0009          STD BLNCT
```

```
098C 1 4400 OC7B      BSI L HDNG      PRINT RTN HEADING
```

```
098E 0 C2F5          LD 2 SIZE-OST
098F 0 D202          STO 2 CYCNT-DST
0990 1 6700 0E58      RT4I3 LDX L3 PARK
0992 0 6B08          STX 3 PACNT
```

```
0993 1 4400 OCCC      SETPA BSI L SEBIT
0995 0 0000          BLNCT DC 0 - 120 %WCD
0996 1 0E66          DC BLANK
0997 0 0001          DC 1
0998 1 4400 OCCC      BSI L SEBIT
099A 0 FFFF          DC -1
099B 0 0000          PACNT DC 0 %PARK
099C 0 0001          DC 1
```

```
099D 0 6102          LOX 1 2
099E 1 4400 OC50      BSI L PTROY      PRINTER READY
09A0 1 4400 OCAC      BSI L PRINT      PRINT ONE LINE
09A2 0 6109          LDX 1 9
09A3 1 4400 0014      BSI L CKXFR      CHECK TRANSFER CMPLT
09A5 0 6108          LOX 1 8
09A6 1 4400 OD3A      BSI L CKPTR      CK PRINTER CMPLT
```

```
09A8 1 4400 ODC2      BSI L ERRIT      PRINT ANY ERRORS
09AA 1 4400 OD93      BSI L LOGIT      GO LOG MESSAGES
```

```
09AC 0 C0EE          LD PACNT
09AD 0 92EC          S 2 TERM-DST
```

```
*****
```

80A04780
80A04790
80A04800
80A04810
80A04820
80A04830
80A04840
80A04850
80A04860
80A04870
80A04880
80A04890
80A04900
80A04910
80A04920
80A04930
80A04940
80A04950
80A04960
80A04970
80A04980
80A04990
80A05000
80A05010
80A05020
80A05030
80A05040
80A05050
80A05060
80A05070
80A05080
80A05090
80A05100
80A05110
80A05120
80A05130
80A05140
80A05150
80A05160
80A05170
80A05180
80A05190
80A05200
80A05210
80A05220
80A05230
80A05240
80A05250
80A05260
80A05270
80A05280
80A05290
80A05300
80A05310
80A05320
80A05330
80A05340
80A05350
80A05360
80A05370
80A05380
80A05390
80A05400
80A05410
80A05420
80A05430
80A05440
80A05450

DATE 04NOV66 15JUN68 14NOV69 20MAR70
EC NO. 415233 411935 431319 431320

PROG ID 080A-1
PAGE 4

DATE 04NOV66 15JUN68 14NOV69 20MAR70
EC NO. 415233 411935 431319 431320

PROG ID 080A-1
PAGE 4A


```
*
*
*      WRST CASE CDRE A
*
*      THIS ROUTINE TESTS THE
*      CORE BUFFER BY PRINTING
*      A NDISY PATTERN.
*
OA0D 1 4400 OCCC RT07 BSI L SEBIT SET UP HEADING
OA0F 0 0009      DC 9
OA10 1 0E7E      DC WCCDR
OA11 0 0009      DC 9
*
OA12 1 4400 0C7B      BSI L HDNG PRINT RTN HEADING
*
*
OA14 1 4400 OCCC      BSI L SEBIT SET UP OATA
OA16 0 0090      DC 144
OA17 1 0E88      DC AWORK
OA18 0 0008      DC 8
*
OA19 0 C2F5 RT07B LO 2 SIZE-DST
OA1A 0 1801      SRA 1
OA1B 1 0400 0F14      STO L BITS
OA10 1 4C00 096E      BSC L RT03A
*****
*
*
*      RDUTINE NINE
*
*      WRST CASE CDRE B
*
*      THIS RDUTINE ASSURES
*      PRINT RELIABILITY BY
*      PRINTING A SECNDND NDISY
*      PATTERN.
*
OA1F 1 4400 OCCC RT08 BSI L SEBIT SET UP HEADING
OA21 0 0008      OC 8
OA22 1 0E7E      OC WCCOR
OA23 0 0008      OC 8
*
*
OA24 1 4400 OCCC      BSI L SEBIT
OA26 0 FFFF      DC -1
OA27 1 0E87      OC WCCB
OA28 0 0001      OC 1
*
OA29 1 4400 0C7B      BSI L HDNG PRINT RTN HEADING
*
*
OA2B 1 4400 OCCC      BSI L SEBIT SET UP OATA
OA2D 0 0090      OC 144
OA2E 1 0E90      OC BWORK
OA2F 0 0008      DC 8
*
OA30 0 70E8      MDX RT07B
*****
*
*
*      RDUTINE TEN
*
*      CHARACTER COMPLIMENT
*
*      THIS ROUTINE PRINTS EACH
*      CHARACTER IN ALL PRINT
*      POSITIONS. %52 CHAR BAR
```

80A06820
80A06830
80A06840
80A06850
80A06860
80A06870
80A06880
80A06890
80A06900
80A06910
80A06920
80A06930
80A06940
80A06950
80A06960
80A06970
80A06980
80A06990
80A07000
80A07010
80A07020
80A07030
80A07040
80A07050
80A07060
80A07070
80A07080
80A07090
80A07100
80A07110
80A07120
80A07130
80A07140
80A07150
80A07160
80A07170
80A07180
80A07190
80A07200
80A07210
80A07220
80A07230
80A07240
80A07250
80A07260
80A07270
80A07280
80A07290
80A07300
80A07310
80A07320
80A07330
80A07340
80A07350
80A07360
80A07370
80A07380
80A07390
80A07400
80A07410
80A07420
80A07430
80A07440
80A07450
80A07460
80A07470
80A07480
80A07490

```
OA31 1 4400 OCCC RT09 BSI L SEBIT SET UP HEADING
OA33 0 000A      DC 10
OA34 1 0EDC      DC CHARC
OA35 0 000A      DC 10
*
OA36 1 4400 0C7B      BSI L HDNG PRINT RTN HEADING
*
*
OA38 1 4400 OCCC      BSI L SEBIT
OA3A 0 0090      DC 144
OA3B 1 0E9E      DC ALPHA
OA3C 0 0024      DC 36
OA3D 0 C2F5      LD 2 SIZE-DST
OA3E 0 1801      SRA 1
OA3F 1 0400 0F14      STO L BITS
OA41 0 C003      LD SIX8
OA42 0 0202      STO 2 CYCNT-DST
OA43 1 4C00 096E      BSC L RT03A
*
OA45 0 0048      SIX8 OC 72 CONSTANT
*****
*
*
*      ROUTINE ELEVEN
*
*      REGISTRATION
*
*      THIS RDUTINE PRINTS A
*      FIELD OF I CHARACTERS
*      SUPERIMPOSED ON A FIELD
*      OF H CHARACTERS WITH A
*      FLDATING 1.
*
OA46 1 4400 OCCC RT0A BSI L SEBIT SET UP HEADING
OA48 0 0006      DC 6
OA49 1 0EE6      DC REGIS
OA4A 0 0006      DC 6
*
OA4B 1 4400 0C7B      BSI L HDNG PRINT RTN HEADING
*
*
OA40 0 C2F5      LD 2 SIZE-OST
OA4E 0 0002      STO RT0AI
OA4F 1 4400 OCCC      BSI L SEBIT SET UP DATA
OA51 0 0090      OC 144
OA52 1 0EEC      OC AITCH
OA53 0 0001      DC 1
*
OA54 0 C2F5      LD 2 SIZE-DST SET LINE COUNTER
OA55 0 0202      STO 2 CYCNT-OST
OA56 1 6700 0F14      LDX L3 BITS
OA58 0 1801      SRA 1
OA59 0 0300      STO 3 0 SET WORD COUNT
*
OA5A 0 0004      STO RT0AJ&1
OA5B 0 C308      LD 3 AITCH-BITS
OA5C 0 1808      SRA 8
OA5D 0 1008      SLA 8
OA5E 0 0700 0000 RT0AJ STO L3 0
OA60 0 C2EC      LD 2 TERM-DST SET SPACE SUPPRESS
OA61 1 7400 080F RT0AA MDX L ONLIN,0 IS UNIT ONLINE
OA63 0 7001      MDX *&1 * YES
OA64 0 024E      STO 2 KEEP-OST
OA65 0 1010      SLA 16
OA66 0 92EC      S 2 TERM-OST
OA67 0 EA3F      OR 2 WRITE&1-DST
OA68 0 023F      STO 2 WRITE&1-OST
```

80A07500
80A07510
80A07520
80A07530
80A07540
80A07550
80A07560
80A07570
80A07580
80A07590
80A07600
80A07610
80A07620
80A07630
80A07640
80A07650
80A07660
80A07670
80A07680
80A07690
80A07700
80A07710
80A07720
80A07730
80A07740
80A07750
80A07760
80A07770
80A07780
80A07790
80A07800
80A07810
80A07820
80A07830
80A07840
80A07850
80A07860
80A07870
80A07880
80A07890
80A07900
80A07910
80A07920
80A07930
80A07940
80A07950
80A07960
80A07970
80A07980
80A07990
80A08000
80A08010
80A08020
80A08030
80A08040
80A08050
80A08060
80A08070
80A08080
80A08090
80A08100
80A08110
80A08120
80A08130
80A08140
80A08150
80A08160
80A08170

1443 FUNCTION TEST

PART NO. 2196382
PAGE 7

1443 FUNCTION TEST

PART NO. 2196382
PAGE 7A

```

0A69 0 6102          LDX      1 2
0A6A 1 4400 0C50     8SI      L PTROY        PRINTER READY
0A6C 1 4400 0CAC     8SI      L PRINT         PRINT ONE LINE
0A6E 0 6109          LDX      1 9
0A6F 1 4400 OD14     8SI      L CKXFR         CK TRANSFER CMPLT
0A71 0 610A          LDX      1 10
0A72 1 4400 003A     8SI      L CKPTR         CK PRINTER COMPLETE
0A74 1 C400 080F     LD       L ONLIN        GET ONLINE SWITCH
0A76 1 4420 0DF3     8SI      L DRDPD,Z      RELEASE DEVICE ID &/-

*
0A78 0 6700 0092     LDX      L3 146
0A7A 1 C700 OF14     RTOAB   LO    L3 8ITS           MODIFY FOR OVERPRINT
0A7C 0 824F          A        2 ONECH-DST
DA7D 1 D700 OF14     STO      L3 8ITS
0A7F 0 73FF          MDX      3 -1
0A80 0 70F9          MDX              RTOAB

*
0A81 0 1010          SLA             16            RESET SPACE SUPRESS
0A82 0 D24E          STO      2 KEEP-DST
0A83 0 C23F          LD       2 WRITE&1-DST
0A84 0 1801          SRA             1
0A85 0 1001          SLA             1
0A86 0 D23F          STO      2 WRITE&1-DST

*
0A87 0 6102          LOX      1 2.
0A88 1 4400 0C50     8SI      L PTRDY        PRINTER REAOY
0A8A 1 4400 0CAC     8SI      L PRINT         PRINT ONE LINE
0A8C 0 6109          LDX      1 9
0A8D 1 4400 OD14     8SI      L CKXFR         CK TRANSFER CMPLT
0A8F 0 610A          LDX      1 10
0A90 1 4400 OD3A     8SI      L CKPTR         CK PRINTER CMPLT
0A92 1 4400 ODC2     8SI      L ERRIT        PRINT ANY ERRDRS
0A94 1 4400 OD93     BSI      L LDGIT        LOG ANY MESSAGES
0A96 1 74FF 0820     MOX      L CYCNT,-1      SKIP IF RTN DONE
0A98 0 7002          MOX              RTOAO
0A99 1 4C00 08EO     8SC      L PCON          EXIT TO NEXT ROUTINE

*
0A9B 0 6700 0092     RTOAO   LOX    L3 146
0A9D 1 C700 OF14     RTOAC   LO    L3 8ITS
0A9F 0 924F          S        2 ONECH-DST
AAA0 1 D700 OF14     STO      L3 8ITS
AAA2 0 73FF          MDX      3 -1
AAA3 0 70F9          MDX              RTOAC

*
AAA4 1 4400 0CB9     8SI      L ROTA          UPDATE OUTPUT FIELD
AAA6 0 7089          MOX              RTOAA

*****
*
*
*
*
*
ROUTINE TWELVE
*
*
*
*
*
*
*
*
THIS ROUTINE PRINTS THE
TYPE BAR IMAGE TO IMPOSE
WORST CASE STRESS ON THE
TYPE BAR DRIVE MECHANISM
*
AAA7 1 4400 OCCC     RT08    8SI      L SEBIT          SET UP HEADING
AAA9 0 0003          DC        3
AAAA 1 0EE0          DC        STRES
AAB 0 0003          DC        3

```

80A08180
80A08190
80A08200
80A08210
80A08220
80A08230
80A08240
80A08250
80A08260
80A08270
80A08280
80A08290
80A08300
80A08310
80A08320
80A08330
80A08340
80A08350
80A08360
80A08370
80A08380
80A08390
80A08400
80A08410
80A08420
80A08430
80A08440
80A08450
80A08460
80A08470
80A08480
80A08490
80A08500
80A08510
80A08520
80A08530
80A08540
80A08550
80A08560
80A08570
80A08580
80A08590
80A08600
80A08610
80A08620
80A08630
80A08640
80A08650
80A08660
80A08670
80A08680
80A08690
80A08700
80A08710
80A08720
80A08730
80A08740
80A08750
80A08760
80A08770
80A08780
80A08790
80A08800
80A08810
80A08820
80A08830
80A08840
80A08850

ADDRESS	DATA	INSTR	OP	COND	OPND	OPND2	OPND3	OPND4	OPND5	OPND6	OPND7	OPND8	OPND9	OPND10	OPND11	OPND12	OPND13	OPND14	OPND15	OPND16	OPND17	OPND18	OPND19	OPND20	OPND21	OPND22	OPND23	OPND24	OPND25	OPND26	OPND27	OPND28	OPND29	OPND30	OPND31	OPND32	OPND33	OPND34	OPND35	OPND36	OPND37	OPND38	OPND39	OPND40	OPND41	OPND42	OPND43	OPND44	OPND45	OPND46	OPND47	OPND48	OPND49	OPND50	OPND51	OPND52	OPND53	OPND54	OPND55	OPND56	OPND57	OPND58	OPND59	OPND60	OPND61	OPND62	OPND63	OPND64	OPND65	OPND66	OPND67	OPND68	OPND69	OPND70	OPND71	OPND72	OPND73	OPND74	OPND75	OPND76	OPND77	OPND78	OPND79	OPND80	OPND81	OPND82	OPND83	OPND84	OPND85	OPND86	OPND87	OPND88	OPND89	OPND90	OPND91	OPND92	OPND93	OPND94	OPND95	OPND96	OPND97	OPND98	OPND99	OPND100	OPND101	OPND102	OPND103	OPND104	OPND105	OPND106	OPND107	OPND108	OPND109	OPND110	OPND111	OPND112	OPND113	OPND114	OPND115	OPND116	OPND117	OPND118	OPND119	OPND120	OPND121	OPND122	OPND123	OPND124	OPND125	OPND126	OPND127	OPND128	OPND129	OPND130	OPND131	OPND132	OPND133	OPND134	OPND135	OPND136	OPND137	OPND138	OPND139	OPND140	OPND141	OPND142	OPND143	OPND144	OPND145	OPND146	OPND147	OPND148	OPND149	OPND150	OPND151	OPND152	OPND153	OPND154	OPND155	OPND156	OPND157	OPND158	OPND159	OPND160	OPND161	OPND162	OPND163	OPND164	OPND165	OPND166	OPND167	OPND168	OPND169	OPND170	OPND171	OPND172	OPND173	OPND174	OPND175	OPND176	OPND177	OPND178	OPND179	OPND180	OPND181	OPND182	OPND183	OPND184	OPND185	OPND186	OPND187	OPND188	OPND189	OPND190	OPND191	OPND192	OPND193	OPND194	OPND195	OPND196	OPND197	OPND198	OPND199	OPND200	OPND201	OPND202	OPND203	OPND204	OPND205	OPND206	OPND207	OPND208	OPND209	OPND210	OPND211	OPND212	OPND213	OPND214	OPND215	OPND216	OPND217	OPND218	OPND219	OPND220	OPND221	OPND222	OPND223	OPND224	OPND225	OPND226	OPND227	OPND228	OPND229	OPND230	OPND231	OPND232	OPND233	OPND234	OPND235	OPND236	OPND237	OPND238	OPND239	OPND240	OPND241	OPND242	OPND243	OPND244	OPND245	OPND246	OPND247	OPND248	OPND249	OPND250	OPND251	OPND252	OPND253	OPND254	OPND255	OPND256	OPND257	OPND258	OPND259	OPND260	OPND261	OPND262	OPND263	OPND264	OPND265	OPND266	OPND267	OPND268	OPND269	OPND270	OPND271	OPND272	OPND273	OPND274	OPND275	OPND276	OPND277	OPND278	OPND279	OPND280	OPND281	OPND282	OPND283	OPND284	OPND285	OPND286	OPND287	OPND288	OPND289	OPND290	OPND291	OPND292	OPND293	OPND294	OPND295	OPND296	OPND297	OPND298	OPND299	OPND300	OPND301	OPND302	OPND303	OPND304	OPND305	OPND306	OPND307	OPND308	OPND309	OPND310	OPND311	OPND312	OPND313	OPND314	OPND315	OPND316	OPND317	OPND318	OPND319	OPND320	OPND321	OPND322	OPND323	OPND324	OPND325	OPND326	OPND327	OPND328	OPND329	OPND330	OPND331	OPND332	OPND333	OPND334	OPND335	OPND336	OPND337	OPND338	OPND339	OPND340	OPND341	OPND342	OPND343	OPND344	OPND345	OPND346	OPND347	OPND348	OPND349	OPND350	OPND351	OPND352	OPND353	OPND354	OPND355	OPND356	OPND357	OPND358	OPND359	OPND360	OPND361	OPND362	OPND363	OPND364	OPND365	OPND366	OPND367	OPND368	OPND369	OPND370	OPND371	OPND372	OPND373	OPND374	OPND375	OPND376	OPND377	OPND378	OPND379	OPND380	OPND381	OPND382	OPND383	OPND384	OPND385	OPND386	OPND387	OPND388	OPND389	OPND390	OPND391	OPND392	OPND393	OPND394	OPND395	OPND396	OPND397	OPND398	OPND399	OPND400	OPND401	OPND402	OPND403	OPND404	OPND405	OPND406	OPND407	OPND408	OPND409	OPND410	OPND411	OPND412	OPND413	OPND414	OPND415	OPND416	
---------	------	-------	----	------	------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	--

80A08860
80A08870
80A08880
80A08890
80A08900
80A08910
80A08920
80A08930
80A08940
80A08950
80A08960
80A08970
80A08980
80A08990
80A09000
80A09010
80A09020
80A09030
80A09040
80A09050
80A09060
80A09070
80A09080
80A09090
80A09100
80A09110
80A09120
80A09130
80A09140
80A09150
80A09160
80A09170
80A09180
80A09190
80A09200
80A09210
80A09220
80A09230
80A09240
80A09250
80A09260
80A09270
80A09280
80A09290
80A09300
80A09310
80A09320
80A09330
80A09340
80A09350
80A09360
80A0937D
80A09380
8DA09390
80A09400
80A09410
8DA09420
80A09430
80A09440
80A09450
80A09460
8DA09470
80A09480
80A09490
80A09500
80A09510
80A09520
80A09530

DATE	04NOV66	15JUN68	14NOV69	20MAR70
EC NO.	415233	411935	431319	431320

PROG ID 080A-1
PAGE 7

DATE	04NOV66	15JUN68	14NOV69	20MAR70
EC NO.	415233	411935	431319	431320

PROG ID 080A-1
PAGE 7A

	*								
OBCE	0	C23C		LD	2	CNTRL-DST			
OBCF	0	8246		A	2	KO100-OST			
OBDO	0	023C		STO	2	CNTRL-DST			
	*								
OB01	0	405D		BSI		MOVE			
OB02	0	405C		BSI		MOVE			
OB03	0	405B		BSI		MOVE			
OB04	0	405A		BSI		MOVE			
	*								
OB05	0	6700	2000	LDX	L3	/2000			
OB07	1	74FF	081F	MOX	L	RPCNT,-1			
OB09	0	7005		MOX		CHAN1			
	*								
OBDA	1	4C80	OBAC	BSC	I	CHAN			

	*								
	*								
	*								
	*								
	*								
									SKIP AFTER PRINT CHANNEL CHECK SUBROUTINE
OB0C	0	0000		SHAN	OC	/0000			
OB0D	1	6D00	081F	STX	L1	RPCNT			SET REPEAT COUNTER
OBDF	1	6F00	083C	SHAN1	STX	L3 DSW7&2			
	*								
OB0E	1	6101		LDX	1	1			
OB02	1	4400	0C50	BSI	L	PTRDY			CK PTR READY
	*								
OB04	0	610A		LDX	1	10			
OB05	1	4400	0C95	BSI	L	FORMS			PERFORM CONTROL
	*								
OB07	0	6105		LDX	1	5			PERFORM PRINT
OB08	1	4400	0CAC	BSI	L	PRINT			
	*								
OB0A	0	6109		LDX	1	9			CK XFER CMPLT
OB0B	1	4400	0014	BSI	L	CKXFR			
	*								
OB0D	0	610A		LOX	1	10			
OB0E	1	4400	003A	BSI	L	CKPTR			CK PTR CMPLT
	*								
OB0F	0	6101		LDX	1	1			
OBF1	1	4400	0C50	BSI	L	PTRDY			AWAIT CARRIAGE READY
	*								
OBF3	0	0A43		XIO	2	SENS0-DST			
OBF4	0	6107		LOX	1	7			
OBF5	1	4400	005E	BSI	L	QLOG			SAVE STATUS
OBF7	1	4400	0CFF	BSI	L	SBANA			CHECK FOR CHANNEL
	*								
OBF9	1	4400	00C2	BSI	L	ERRIT			
OBFB	1	4400	0D93	BSI	L	LOGIT			
	*								
OBFO	1	7401	0F37	MOX	L	BITS&35,1			
	*								
OBFF	0	C23C		LO	2	CNTRL-DST			
OC00	0	8246		A	2	KO100-OST			
OC01	0	D23C		STO	2	CNTRL-OST			
	*								
OC02	0	402C		BSI		MOVE			
OC03	0	402B		BSI		MOVE			
OC04	0	402A		BSI		MOVE			
OC05	0.	4029		BSI		MOVE			
	*								
OC06	0	6300		LOX	3	0			
OC07	1	74FF	081F	MDX	L	RPCNT,-1			
OC09	0	70D5		MOX		SHAN1			
	*								
OC0A	1	4C80	OB0C	BSC	I	SHAN			

80A12260
80A12270
80A12280
80A12290
80A12300
80A12310
80A12320
80A12330
80A12340
80A12350
80A12360
80A12370
80A12380
80A12390
80A12400
80A12410
80A12420
80A12430
80A12440
80A12450
80A12460
80A12470
80A12480
80A12490
80A12500
80A12510
80A12520
80A12530
80A12540
80A12550
80A12560
80A12570
80A12580
80A12590
80A12600
80A12610
80A12620
80A12630
80A12640
80A12650
80A12660
80A12670
80A12680
80A12690
80A12700
80A12710
80A12720
80A12730
80A12740
80A12750
80A12760
80A12770
80A12780
80A12790
80A12800
80A12810
80A12820
80A12830
80A12840
80A12850
80A12860
80A12870
80A12880
80A12890
80A12900
80A12910
80A12920
80A12930

1443 FUNCTION TEST

0C0C	0	0000	
0C0D	1	4400	0CCC
0C0F	0	001E	
0C10	1	0E66	
0C11	0	0001	
0C12	0	C2E2	
0C13	0	82EC	
0C14	0	100E	
0C15	1	4C10	0C1D
0C17	1	4400	0CCC
0C19	0	FFFA	
0C1A	1	0F08	
0C1B	0	0006	
0C1C	0	7005	
0C1D	1	4400	0CCC
0C1F	0	FFFA	
0C20	1	0F0E	
0C21	0	0006	
0C22	1	4400	0CCC
0C24	0	FFE8	
0C25	1	0EFF	
0C26	0	0001	
0C27	0	C257	
0C28	1	0400	0F50
0C2A	0	C24A	
0C2B	1	D400	0F37
0C2D	1	4C80	0C0C
0C2F	0	0000	
0C30	0	C258	
0C31	0	1003	
0C32	0	0001	
0C33	0	6700	0000
0C35	1	6580	0F14
0C37	1	C500	0F14
0C39	0	18D0	
0C3A	1	C500	0F13
0C3C	0	1380	
0C3D	1	4C08	0C47
0C3F	1	D500	0F13
0C41	0	1800	
0C42	1	4C08	0C4C
0C44	1	D500	0F14
0C46	0	7007	
0C47	0	C257	
0C48	1	D500	0F12
0C4A	1	74FF	0F14

```

*****
*
*
*
*
*          SETUP CARRIAGE TEST
*          OUTPUT ROUTINE
*
SETIT OC      /0000
      BSI L    SEBIT        SET UP PRINT FIELD
      DC      30
      OC      BLANK
      DC      1
*
*
      LD      2 RID-DST
      A       2 TERM-DST
      SLA     14
      BSC L   SETT1,-      BR IF SPACING
*
      BSI L   SEBIT
      DC     -6
      DC     CNNL
      OC     6
*
      MOX           SETT2
*
SETT1 BSI L   SEBIT
      DC     -6
      DC     SPCC
      DC     6
*
SETT2 BSI L   SE8IT
      OC     -24
      OC     E
      DC     1
*
      LD      2 SLASH-OST   SET FLOATING SLASH
      STO L   BITS&60
*
      LO      2 ONE-OST
      STO L   BITS&35
*
      BSC I   SETIT         RETURN
*****
*
*
MOVE  OC      /0000
      LD      2 STEP-DST
      SLA     3
      STO     *&1
      LOX L3  /0000
*
      LOX I1  BITS
      LO L1  BITS
      RTE     16
      LD L1  BITS-1
      SLT     3 0
      BSC L   MOVE4,&      BR IF BLANK
      STO L1  BITS-1
      RTE     16
      BSC L   MOVE5,&      BR IF BLANK
      STO L1  BITS
      MDX     MOVE6
*
MOVE4 LD      2 SLASH-DST
      STO L1  BITS-2
      MDX L   BITS,-1

```

80A12940
80A12950
80A12960
80A12970
80A12980
80A12990
80A13000
80A13010
80A13020
80A13030
80A13040
80A13050
80A13060
80A13070
80A13080
80A13090
80A13100
80A13110
80A13120
80A13130
80A13140
80A13150
80A13160
80A13170
80A13180
80A13190
80A13200
80A13210
80A13220
80A13230
80A13240
80A13250
80A13260
80A13270
80A13280
80A13290
80A13300
80A13310
80A13320
80A13330
80A13340
80A13350
80A13360
80A13370
80A13380
80A13390
80A13400
80A13410
80A13420
80A13430
80A13440
80A13450
80A13460
80A13470
80A13480
80A13490
80A13500
80A13510
80A13520
80A13530
80A13540
80A13550
80A13560
80A13570
80A13580
80A13590
80A13600
80A13610

```

0C7F 0 C253          LD      2 SPAC3-DST    SET TO TRIPLE SPACE
0C80 0 D23C          STO     2 CNTRL-DST

                                *
0C81 0 6104          LDX     1 4
0C82 1 4400 0C95     BSI     L FORMS           PERFORM SPACING

                                *
0C84 0 6105          LDX     1 5
0C85 1 4400 0CAC     BSI     L PRINT           PRINT HEADING
0C87 0 6109          LDX     1 9
0C88 1 4400 OD14     8SI     L CKXFR           WAIT FOR XFER CMPLT
0C8A 0 610A          LDX     1 10
0C8B 1 4400 OD3A     8SI     L CKPTR            BR TO CK PRNTR
0C8D 1 4400 ODF3     BSI     L DROPD           BR TO RELEASE DEVICE

                                *
0C8F 1 6700 OD74     LDX     L3 MSGAR&2       RESET LOG AREA
0C91 1 6F00 OD61     STX     L3 QLOGI&1
0C93 1 4C80 OC78     BSC     I HDNG             RETURN

*****
*
*
*
*                                     CARRIAGE CONTROL ROUTINE
*
*                                     THIS ROUTINE PERFORMS
*                                     CARRIAGE CONTROL AND
*                                     CHECKS THE DSW AFTER
*                                     THE XIO CONTROL COMMAND.
*
*                                     CALL *****
*                                     * LDX 1 MSG ID NO *
*                                     * BSI L FORMS   *
*                                     *****
*
0C95 0 0000          FORMS DC      /0000
0C96 0 C246          LD      2 K0100-DST    RESTORE PRINT WORDS
0C97 0 D242          STO     2 PRDSW-DST
0C98 0 D240          STO     2 XFDSW-DST

                                *
0C99 0 OA3C          XIO     2 CNTRL-DST    CONTROL 1443
0CA9 0 OA41          XIO     2 SENSO-DST    SENSE - NO RESET
0C98 0 1000          NOP     0

                                *
0C9C 1 4400 OD5E     8SI     L QLOG           SAVE STATUS
0C9E 1 4400 OCFF     8SI     L SBANA          CHECK FOR BUSY
OCA0 0 610A          LDX     1 10
OCA1 1 4400 OD3A     BSI     L CKPTR            GO CK PRNTR
OCA3 1 4400 ODC2     BSI     L ERRIT           BR TO ERROR RTN
OCA5 1 4400 OD93     8SI     L LOGIT           BR TO LOG RTN
OCA7 0 6101          LDX     1 1
OCA8 1 4400 OC50     BSI     L PTRDY           BR TP CK FOR RDY
OCAA 1 4C80 OC95     BSC     I FORMS         EXIT

*****
*
*
*
*                                     PRINT ROUTINE
*
*                                     THIS ROUTINE PRINTS DATA
*                                     AND CHECKS THE DSW AFTER
*                                     XIO INITIALIZE WRITE
*                                     COMMAND.
*
*                                     CALL *****
*                                     * LDX 1 MSG ID NO *
*                                     * BSI L PRINT   *
*                                     *****
*
OCAC 0 0000          PRINT DC      /0000

```

```
* LD      2 SPAC3-DST   SET TO TRIPLE SPACE
* STO     2 CNTRL-DST
*
* LDX     1 4
* BSI     L FORMS       PERFORM SPACING
*
* LDX     1 5
* BSI     L PRINT       PRINT HEADING
* LDX     1 9
* 8SI     L CKXFR       WAIT FOR XFER CMPLT
* LDX     1 10
* 8SI     L CKPTR       BR TO CK PRNTR
* BSI     L DROPD       BR TO RELEASE DEVICE
*
* LDX     L3 MSGAR&2    RESET LOG AREA
* STX     L3 QLOGI&1
* BSC     I HDNG        RETURN
*****
*
*
* CARRIAGE CONTROL ROUTINE
*
* THIS ROUTINE PERFORMS
* CARRIAGE CONTROL AND
* CHECKS THE DSW AFTER
* THE XIO CONTROL COMMAND.
*
* CALL *****
* * LDX 1 MSG ID NO *
* * BSI L FORMS *
* *****
*
* FORMS DC /0000
* LD      2 K0100-DST   RESTORE PRINT WORDS
* STO     2 PRDSW-DST
* STO     2 XFDSW-DST
*
* XIO     2 CNTRL-DST   CONTROL 1443
* XIO     2 SENSO-DST   SENSE - NO RESET
* NOP     0
*
* 8SI     L QLOG        SAVE STATUS
* 8SI     L SBANA       CHECK FOR BUSY
* LDX     1 10
* BSI     L CKPTR       GO CK PRNTR
* BSI     L ERRIT       BR TO ERROR RTN
* 8SI     L LOGIT       BR TO LOG RTN
* LDX     1 1
* BSI     L PTRDY       BR TP CK FOR RDY
* BSC     I FORMS       EXIT
*****
*
*
* PRINT ROUTINE
*
* THIS ROUTINE PRINTS DATA
* AND CHECKS THE DSW AFTER
* XIO INITIALIZE WRITE
* COMMAND.
*
* CALL *****
* * LDX 1 MSG ID NO *
* * BSI L PRINT *
* *****
*
* PRINT DC /0000
```

80A14300
80A14310
80A14320
80A14330
80A14340
80A14350
80A14360
80A14370
80A14380
80A14390
80A14400
80A14410
80A14420
80A14430
80A14440
80A14450
80A14460
80A14470
80A14480
80A14490
80A14500
80A14510
80A14520
80A14530
80A14540
80A14550
80A14560
80A14570
80A14580
80A14590
80A14600
80A14610
80A14620
80A14630
80A14640
80A14650
80A14660
80A14670
80A14680
80A14690
80A14700
80A14710
80A14720
80A14730
80A14740
80A14750
80A14760
80A14770
80A14780
80A14790
80A14800
80A14810
80A14820
80A14830
80A14840
80A14850
80A14860
80A14870
80A14880
80A14890
80A14900
80A14910
80A14920
80A14930
80A14940
80A14950
80A14960
80A14970

1443 FUNCTION TEST

```
OCAD 0 C246      LD 2 K0100-DST RESTORE INTRPT WORDS
OCAE 0 0242      ST0 2 PRDSW-DST
OCAF 0 D240      ST0 2 XFOSW-DST
*
OCB0 0 0A3E      XIO 2 WRITE-DST PRINT LINE
OCB1 0 0A41      XIO 2 SENSO-DST SENSE - NO RESET
OCB2 0 1000      NOP 0
OCB3 1 4400 0D5E BSI L QLOG SAVE STATUS
OCB5 1 4400 0CFF BSI L SBANA CHECK FOR BUSY
OCB7 1 4C80 0CAC BSC I PRINT EXIT
```

*

*

*

*

*

*

*

*

*

```
OCB9 0 0000      ROTA DC /0000
OCBA 0 6A0E      STX 2 ROTA2&1 SAVE XR2
OCBB 0 6600 0090 LDX L2 144 SET TO END OF TABLE
OCBD 1 C400 0F15 LD L BITS&1 PLACE 1ST CHAR LAST
OCBF 0 18D0      RTE 16
OCC0 1 C600 0F14 ROTA1 L0 L2 BITS PICK UP NEXT WORD
OCC2 0 18D8      RTE 24
OCC3 1 D600 0F14 ST0 L2 BITS SAVE ADVANCED CHARS
OCC5 0 1088      SLT 8
OCC6 0 72FF      MDX 2 -1 CHECK IF TABLE CMPLT
OCC7 0 70F8      MDX ROTA1
OCC8 0 6600 0000 ROTA2 LDX L2 /0000 RESTORE XR2
OCCA 1 4C80 0CB9 BSC I ROTA
```

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

```
OCCC 0 0000      SEBIT OC 0
*
OCC0 0 6924      STX 1 SEBOT&1 SAVE INDEX REGS
OCC2 0 6A25      STX 2 SEBOT&3
*
OCCF 1 6780 0CCC LOX I3 SEBIT FETCH CALLING ADDR
*
OC01 1 6600 0F14 LDX L2 BITS INITIALIZE RTN
OC03 0 6A18      STX 2 PUT&1
*
```

*

80A14980
80A14990
80A15000
80A15010
80A15020
80A15030
80A15040
80A15050
80A15060
80A15070
80A15080
80A15090
80A15100
80A15110
80A15120
80A15130
80A15140
80A15150
80A15160
80A15170
80A15180
80A15190
80A15200
80A15210
80A15220
80A15230
80A15240
80A15250
80A15260
80A15270
80A15280
80A15290
80A15300
80A15310
80A15320
80A15330
80A15340
80A15350
80A15360
80A15370
80A15380
80A15390
80A15400
80A15410
80A15420
80A15430
80A15440
80A15450
80A15460
80A15470
80A15480
80A15490
80A15500
80A15510
80A15520
80A15530
80A15540
80A15550
80A15560
80A15570
80A15580
80A15590
80A15600
80A15610
80A15620
80A15630
80A15640
80A15650

1443 FUNCTION TEST

```
OCD4 0 C300      LD 3 0 FETCH WORD COUNT
OC05 1 4C30 0CFA BSC L RSTWC,-Z BR IF RESTORE FIELD
*
OCD7 1 C400 0F14 LD L BITS ADD TO EXISTNG FIELD
OC09 0 8012      A PUT&1
OCDA 0 0011      * ST0 PUT&1
*
OCD8 0 C300      LD 3 0 MAKE WORD COUNT
OCDC 0 9300      S 3 0 * POSITIVE
OCDD 0 9300      S 3 0
OCDE 0 D001      STOLX ST0 LXR2&1
*
OCDF 0 6600 0000 LXR2 LDX L2 0 LOAD XR2 WITH WD CNT
OCE1 0 C301      LD 3 1 FETCH SOURCE DATA A0
OCE2 1 8400 080A A L TERM
OCE4 0 D005      ST0 GET&1
*
OCE5 0 C302      LXR1 L0 3 2 FETCH SOURCE SIZE
OCE6 0 0001      ST0 *&1
OCE7 0 6500 0000 LDX L1 0
OCE9 0 C500 0000 GET LD L1 0 XFER SOURCE DATA
OCEB 0 D600 0000 PUT ST0 L2 0 * TO PRINT AREA
OCED 1 7401 0F14 MDX L BITS,1 INCR PRINT FIELD WC
*
OCEF 0 72FF      MDX 2 -1
OCF0 0 7006      MDX 0ECX0 RET TO XFER NXT DATA
*
OCF1 0 6500 0000 SEBOT LDX L1 0 FINISHED WITH XFER
OCF3 0 6600 0000 LDX L2 0 * RESTORE XRS
OCF5 0 4F00 0003 BSC L3 3 RETURN
*
OCF7 0 71FF      DECX0 MDX 1 -1
OCF8 0 70F0      MDX GET GO XFER NEXT DATA
OCF9 0 70EB      MOX LXR1 FULL - WRAP DATA
* * AROUND IN PRINT AR
*
OCFA 0 1010      RSTWC SLA 16 RESET PRINT FIELO WC
OCFB 1 D400 0F14 ST0 L BITS
OCFD 0 C300      LO 3 0
OCFE 0 700F      MOX STOLX
```

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

*

OCFF 0 0000 SBANA OC /0000

80A15660
80A15670
80A15680
80A15690
80A15700
80A15710
80A15720
80A15730
80A15740
80A15750
80A15760
80A15770
80A15780
80A15790
80A15800
80A15810
80A15820
80A15830
80A15840
80A15850
80A15860
80A15870
80A15880
80A15890
80A15900
80A15910
80A15920
80A15930
80A15940
80A15950
80A15960
80A15970
80A15980
80A15990
80A16000
80A16010
80A16020
80A16030
80A16040
80A16050
80A16060
80A16070
80A16080
80A16090
80A16100
80A16110
80A16120
80A16130
80A16140
80A16150
80A16160
80A16170
80A16180
80A16190
80A16200
80A16210
80A16220
80A16230
80A16240
80A16250
80A16260
80A16270
80A16280
80A16290
80A16300
80A16310
80A16320
80A16330

1443 FUNCTION TEST

PART ND. 2196382
PAGE 13

1443 FUNCTIDN TEST

PART NO. 2196382
PAGE 13A

0D00	1	7500	081E	MOX	1	DST		FETCH ANALYSIS MSG
0D02	0	1000		NOP		0		
0D03	0	0248		STO	2	SBANQ-DST		
0D04	0	1800		RTE		16		
0D05	0	C248		LO	2	SBANQ-OST		
0D06	0	F102		EOR	1	2		CK AGAINST EXPECTED
0D07	0	E103		AND	1	3		REMOVE UNNEC 8ITS
0D08	0	D100		STO	1	0		
0D09	0	D101		STO	1	1		
0D0A	1	4C98	OCFF	BSC	1	S8ANA,&-		EXIT IF OSW OK
0D0C	0	C103		LD	1	3		SET DSW S/B
0D0D	0	F2EC		EOR	2	TERM-DST		
0D0E	0	E248		ANO	2	SBANQ-DST		
0D0F	0	E902		OR	1	2		
0D10	0	18D0		RTE		16		
0D11	0	0900		STD	1	0		SAVE ANY ERROR FOUND

```
0012 1 4C80 0CFF          BSC  I  SBANA          EXIT
```

```
*****  
*  
*  
*  
*                                CHECK TRANSFER COMPLETE  
*                                ROUTINE
```

```

0014 0 0000      CKXFR 0C      /0000
0015 0 C246      LD      2 K0100-DST  RESET WAIT COUNTER
0016 0 1802      SRA      2
0017 0 0203      STD      2 WACNT-DST

```

```

0018 0 6901          STX    1 *&1
0019 0 6500 0000     CKXF1 LOX  L1 /0000
001B 1 6600 081E     LOX  L2 DST
001D 0 C240          LD     2 XFD SW-DST
001E 0 F246          FOR   2 K0100-DST
001F 1 4C18 0D26     BSC   L CKXF7.&- BR IF XFER NOT CMLPT

```

```

0021 0 C240      LD      2 XFDSW-DST
0022 0 4038      BSI     QLOG      SAVE STATUS
0023 0 40D8      BSI     SBANA     CHECK FOR ERRDR

```

OD24 1 4C80 OD14 CKXF3 8SC I CKXFR RETURN

0D26	1	74FF	0821		CKXF7	MOX	L	WACNT,-1	
0D28	0	700D				MOX		CKXF8	
0D29	0	C0F0				LD		CKXF1&1	
0D2A	0	1002				SLA		2	
0D28	0	D001				STO		*&1	
0D2C	0	6500	0000			LDX	L1	/0000	
0D2E	0	0A43				XID	2	SFNSD-DST	
0D2F	0	EA46				OR	2	K0100-OST	
0D30	0	40CE				BSI		S8ANA	SAVE ERRDR MESSAGE
0D31	0	F246				EDR	2	K0100-OST	
0D32	0	DA34				STD	2	DSWO-OST	
0D33	0	10A0				SLT		32	
0D34	0	0900				STD	1	0	
0D35	0	70EF				MDX		CKXF3	

```

0036 1 6600 0019      CKXF8 LDX L2 CKXF1      TRY AGAIN - LATER
0038 1 4C00 0D8E      8SC L LOPGD

```

```

*****
*
*
*
CKPTR  DC      /0000
003A  0  0000
003B  0  C245
003C  0  D203
          LO      2  K0400-OST  RESFT  WAIT  COUNTER
          STD     2  WACNT-DST

```

80A16340
80A16350
80A16360
80A16370
80A16380
80A16390
80A16400
80A16410
80A16420
80A16430
80A16440
80A16450
80A16460
80A16470
80A16480
80A16490
80A16500
80A16510
80A16520
80A16530
80A16540
80A16550
80A16560
80A16570
80A16580
80A16590
80A16600
80A16610
80A16620
80A16630
80A16640
80A16650
80A16660
80A16670
80A16680
80A16690
80A16700
80A16710
80A16720
80A16730
80A16740
80A16750
80A16760
80A16770
80A16780
80A16790
80A16800
80A16810
80A16820
80A16830
80A16840
80A16850
80A16860
80A16870
80A16880
80A16890
80A16900
80A16910
80A16920
80A16930
80A16940
80A16950
80A16960
80A16970
80A16980
80A16990
80A17000
80A17010

```

0030 0 6901          STX  1 *&1
003E 0 6500 0000     CKPT1 LOX  L1 /0000
0040 1 6600 081E     LOX  L2 0T
0042 0 C242          LO   2 PROSW-DST
0043 0 F246          EOR   2 K0100-0ST
0044 1 4C18 0048     BSC   L CKPT7,&-      BR IF PTR NOT CMPLT

```

```

0046 0 C242      LD      2 PRDSW-DST
0047 0 4016      BSI     QLDG      SAVF STATUS
0048 0 40B6      BSI     SRANA     CHECK FOR ERROR

```

```
0049 1 4C80 003A      CKPT3 BSC  I  CKPTR      RETURN
```

```

004B 1 74FF 0821      CKPT7 MOX L WACNT,-1
0D40 0 7000           MOX      CKPT8
004F 0 C0F0           LO       CKPT1&1
004F 0 1002           SLA      2
0D50 0 0001           STO      *&1
0D51 0 6500 0000      LDX      L1 /0000
0053 0 0A43           XIO      2 SENSD-DST
0054 0 EA46           OR       2 K0100-DST
0D55 0 40A9           BSI      SBANA
0D56 0 F246           EOR      2 K0100-OST
0D57 0 DA38           STD      2 DSW-E-OST
0058 0 10A0           SLT      32
0059 0 D900           STD      1 0
0D5A 0 70EE           MOX      CKPT3

```

```

0058 1 6600 003E      CKPT8 LDX  L2 CKPT1      TRY AGAIN - LATER
005D 0 7060          MDX      L0060

```

```
*
*
* THE QULDG ROUTINE SAVES
* LOG MESSAGES IN DROER
* RRCFIVFD FOR OUTPUT AT
* A LATER TIME.
```

```

*                                     CALL *****
*                                     * LOX 1 MSG IO ND *
*                                     * BSI L QLOG *
*                                     *****
*
*                                     AT FENTRY TIME
*
*                                     ACC EQUALS MSG WANTEO
*                                     XR1 EQUALS MSG ID NO

```

```
*      ACC IS SAVED
*      XR1 IS MULTIPLIED BY FOUR
```

```

005E 0 0000          QLOG DC          /0000
005F 0 690F          STX   1 QLDG2&1
0060 1 6500 0074     QLOG1 LOX  L1 MSGAR&2
0062 1 7402 0D61     MOX   L QLDG1&1.2 UPDATE STD AREA

```

0D64 0 0101 STO 1 1 SAVE MESSAGE

```

OD65 0 C009          LD      QLDG2&1      SFT MESSAGE IO
OD66 0 E828          OR      KA000
OD67 0 D100          STO     1 0
OD68 0 1810          SRA     16             CLEAR NEXT MSGID
OD69 0 0102          STO     1 2

```

OD6A 0 C004 LD QLDG2&1 SET XR1

80A17020
80A17030
80A17040
80A17050
80A17060
80A17070
80A17080
80A17090
80A17100
80A17110
80A17120
80A17130
80A17140
80A17150
80A17160
80A17170
80A17180
80A17190
80A17200
80A17210
80A17220
80A17230
80A17240
80A17250
80A17260
80A17270
80A17280
80A17290
80A17300
80A17310
80A17320
80A17330
80A17340
80A17350
80A17360
80A17370
80A17380
80A17390
80A17400
80A17410
80A17420
80A17430
80A17440
80A17450
80A17460
80A17470
80A17480
80A17490
80A17500
80A17510
80A17520
80A17530
80A17540
80A17550
80A17560
80A17570
80A17580
80A17590
80A17600
80A17610
80A17620
80A17630
80A17640
80A17650
80A17660
80A17670
80A17680
80A17690

OATE	04NDV66	15JUN68	14NDV69	20MAR70
EC ND.	415233	411935	431319	431320

PRDG IO 080A-1
PAGE 13

DATE	04NDV66	15JUN68	14NDV69	20MAR70
EC NO.	415233	411935	431319	431320

PROG ID 080A-1
PAGE 13A

1443 FUNCTION TEST

```
0D68 0 1002      SLA      2
0D6C 0 D002      STO      QLOG2&1
0D6D 0 C101      LD       1 1      RESTDRE ACC
0D6E 0 6500 0000 QLDG2 LDX L1 /0000
*
0D70 1 4C80 0D5E      BSC I QLDG      EXIT TD USER
*
0D72 0000      BSS E 0
0D72 0 0001      MSGAR DC 1      MODIFIER WORD COUNT
0D73 0 0000      DC 0      HEX OUTPUT
0D74 0 0000      DC 0      MESSAGE ID
0D75 0 0000      DC 0      DBJECT DSW
0D76 001C      BSS 28
0D92 0 A000      KA000 DC /A000      CDNSTANT
*****
*
* LDG MESSAGE RDUTINE
*
* THE LDGGING RDUTINE SETS
* UP AND LDGS MESSAGES
* PREVIOUSLY SAVED BY THE
* QLDG RDUTINE.
*
0D93 0 0000      LDGIT DC /0000
0D94 1 6700 0D74      LDX L3 MSGAR&2      RESET QULOG AREA
0D96 0 68CA      STX 3 QLOG1&1
*
0D97 0 C2E2      LD 2 RID-DST      CHECK IF FORCE LDG
0D98 0 8250      CMP 2 K000C-DST
0D99 0 7019      MDX QLUP1      NDT IN THIS RDUTINE
0D9A 0 1000      NDP
0D98 0 C2E4      LD 2 SW0-DST
0D9C 0 1009      SLA 9
0D9D 1 4C10 0D83      BSC L QLUP1,-      8R IF NDT LOG NOW
*
0D9F 1 C480 0E10      LD I GETAD
0DA1 1 4C88 0D93      BSC I LOGIT,&      8R IF NDT RELEASED
*
***** PRINT MESSAGE
0DA3 0 4480 012F      LDG1 BSI I LOG *
0DA5 1 0D72      DC MSGAR MSG *
0DA6 1 0D89      DC LDGBY BUSY *
0DA7 1 0DAA      DC QLUP TERM *
*****
0DA8 0 4C80 012D      BSC I START
*
*
0DAA 1 6700 0D76      QLUP LDX L3 MSGAR&4
0DAC 0 C800      LDD 3 0
0DAD 1 4C10 0D83      BSC L QLUP1,-      EXIT - ND MORE MSGS
*
0DAF 0 D8C4      STD MSGAR&2      MDVE MSG FDR OUTPUT
0D80 1 7402 0DA8      MDX L QLUP&1,2
*
0D82 0 70F0      MDX LDG1      GO LDG
*
0D83 1 6700 0D76      QLUP1 LDX L3 MSGAR&4      RESET CHECK AREA
0DB5 0 6BF5      STX 3 QLUP&1
*
0D86 0 4063      BSI HALT      CHECK IF HALT PRDG
*
0D87 1 4C80 0D93      BSC I LDGIT      RETURN TD USER
*
*
0DB9 1 6600 0DA3      LOG8Y LDX L2 LOG1      TRY AGAIN - LATER
0DBB 0 7002      MDX LOPGO
*
```

80A17700
80A17710
80A17720
80A17730
80A17740
80A17750
80A17760
80A17770
80A17780
80A17790
80A17800
80A17810
80A17820
80A17830
80A17840
80A17850
80A17860
80A17870
80A17880
80A17890
80A17900
80A17910
80A17920
80A17930
80A17940
80A17950
80A17960
80A17970
80A17980
80A17990
80A18000
80A18010
80A18020
80A18030
80A18040
80A18050
80A18060
80A18070
80A18080
80A18090
80A18100
80A18110
80A18120
80A18130
80A18140
80A18150
80A18160
80A18170
80A18180
80A18190
80A18200
80A18210
80A18220
80A18230
80A18240
80A18250
80A18260
80A18270
80A18280
80A18290
80A18300
80A18310
80A18320
80A18330
80A18340
80A18350
80A18360
80A18370

1443 FUNCTION TEST

```
0D8C 1 6600 0DE3      ERR8Y LDX L2 ERR5      TRY AGAIN - LATER
0D8E 1 6E00 0809      LOPGO STX L2 MLSCF
0DC0 0 4C80 012D      BSC I START
*****
*
*
* LDG ERROR RDUTINE
*
* THE ERROR ROUTINE LOGS
* * ALL ERRDR MESSAGES
*
0DC2 0 0000      ERRIT DC /0000
0DC3 0 402F      BSI ORPO      RELEASE THE 1443
0DC4 1 C480 0E10      LD I GETAD
0DC6 1 4C88 0DC2      BSC I ERRIT,&      8R IF NOT RELEASED
*
0DC8 0 6500 FFC8      ERR1 LDX L1 -56      CHECK ERRDR TABLE
0DCA 0 10A0      SLT 32
0DCB 1 B000 085A      ERR2 DCM L1 DST&60
0DCD 0 1000      NOP 0
0DCE 0 7008      MDX ERR4      8R IF ENTRY FOUND
0DCF 0 7104      MDX 1 4
0DD0 0 70FA      MDX ERR2
*
0DD1 0 C2E5      LD 2 SW1-OST
0DD2 0 F244      EDR 2 SWCMP-OST
0DD3 1 4C20 08E0      BSC L PCDN,Z      8R IF SW1 CHANGED
0DD5 1 4C80 0DC2      BSC I ERRIT      RETURN TO USER
*
0DD7 1 CD00 085A      ERR4 LOD L1 DST&60      TRANSFER TO OUTPUT
0DD9 0 DB16      STD EMES&3
*
0DDA 0 6914      STX 1 EMES&2      BUILD MSG ID
0DD8 0 C013      LD EMES&2
0DDC 0 8015      A SIXTY
0DDD 0 1802      SRA 2
0DDE 0 E80D      OR KE000
0DDF 0 D00F      STO EMES&2
0DE0 0 10A0      SLT 32      RESTORE ERROR WORDS
0DE1 1 D000 085A      STD L1 DST&60
0DE3 1 6600 081E      LDX L2 DST
***** PRINT ERROR
0DE5 0 4480 0130      BSI I ERRDR *
0DE7 1 0DE0      DC EMES MSG *
0DE8 1 0DBC      DC ERR8Y BUSY *
0DE9 1 0DEA      DC * *
*****
0DEA 0 70DD      MDX ERR1
0DEC 0 0000      BSS E 0
0DEC 0 E000      KE000 DC /E000
0DED 0 0002      EMES DC 2      MODIFIER WORD COUNT
0DEE 0 0000      DC 0      HEX OUTPUT
0DEF 0 E00F      DC /E00F      MESSAGE ID
0DF0 0 ED00      DC /ED00      DSW
0DF1 0 0000      DC 0      DSW SHOULD BE
0DF2 0 003C      SIXTY DC 60      CDNSTANT
*****
*
*
*
* RELEASE DEVICE RDUTINE
*
0DF3 0 0000      DROPD DC 0
0DF4 1 C480 0E10      LD I GETAD
0DF6 1 4C10 00FF      BSC L DRPE0,-
```

80A18380
80A18390
80A18400
80A18410
80A18420
80A18430
80A18440
80A18450
80A18460
80A18470
80A18480
80A18490
80A18500
80A18510
80A18520
80A18530
80A18540
80A18550
80A18560
80A18570
80A18580
80A18590
80A18600
80A18610
80A18620
80A18630
80A18640
80A18650
80A18660
80A18670
80A18680
80A18690
80A18700
80A18710
80A18720
80A18730
80A18740
80A18750
80A18760
80A18770
80A18780
80A18790
80A18800
80A18810
80A18820
80A18830
80A18840
80A18850
80A18860
80A18870
80A18880
80A18890
80A18900
80A18910
80A18920
80A18930
80A18940
80A18950
80A18960
80A18970
80A18980
80A18990
80A19000
80A19010
80A19020
80A19030
80A19040
80A19050

1443 FUNCTIDN TEST

```

0E2E 0 0000
0E2F 1 6600 081E
0E31 0 C2E4
0E32 0 1009
0E33 0 1809
0E34 0 02E4
0E35 1 C480 0E10
0E37 1 4C90 0E2E

0E39 0 4480 0132
0E38 1 0811
0E3C 1 080A

0E3D 1 4C80 0E2E

0E3F 1 6500 0E45
0E41 0 6980
0E42 1 74FF 00E0
0E44 0 709E
0E45 1 7401 0DED

0E47 0 4C80 012E

0E49 0 3239
0E4A 0 1300
0E48 0 2339
0E4C 0 2535

0E4D 0 0000
0E4E 0 2020
0E4F 0 1010
0E50 0 0808
0E51 0 0404
0E52 0 0202

0E53 0 0101
0E54 0 2731
0E55 0 2939
0E56 0 1318
0E58 0000
0E58 0 8000
0E59 0 0040
0E5A 0 A000
0E58 0 0060
0E5C 0 9000
0E5D 0 0050
0E5E 0 8800
0E5F 0 0048
0E60 0 8400
0E61 0 0044
0E62 0 8200

```

```
*****
*
*
*
*
*      END OF PRDGRAM ROUTINE
*
ENDIT OC          0
        LOX L2 OST
        LO   2 SWO-OST
        SLA   9
        SRA   9
        STO   2 SWO-DST
        LO   I GETAD
        8SC I ENOIT,- BR IF 1443 RELEASED
***** RELEASE DEVICE
        8SI I RELOV *
ENOAD OC DOEF1 *
DC TERM *
*****
        8SC I ENOIT
*****
*
*
*
*      EOIT ERROR ENO ROUTINE
*
OENO LOX L1 OEN01
     STX 1 ERRIT
     MOX L EMESS,-1
     MOX ERR5 PRINT EDIT ERROR
OENDI MOX L EMESS,1
*
        8SC I ENO CALL END
*****
*
*
*
*
*      OUTPUT OATA TABLES
*
BLINE DC /3239 8 I
      OC /1300 T
      OC /2339 L I
      OC /2535 N E
*
BILK DC /0000 BLANK
      OC /2020 MINUS
      DC /1010 PLUS
      DC /0808 8
      OC /0404 4
      OC /0202 2
*
PAR DC /0101 1
    OC /2731 P A
    OC /2939 R I
    DC /1318 T Y
    8SS E 0
PARK OC /8000 BAD BLANK
     DC /0040
     DC /A000 MINUS
     DC /0060
     OC /9000 PLUS
     DC /0050
     OC /8800 8
     DC /0048
     DC /8400 4
     OC /0044
     DC /8200 2
```

80A19740
80A19750
80A19760
80A19770
80A19780
80A19790
80A19800
80A19810
80A19820
80A19830
80A19840
80A19850
80A19860
80A19870
80A19880
80A19890
80A19900
80A19910
80A19920
80A19930
80A19940
80A19950
80A19960
80A19970
80A19980
80A19990
80A20000
80A20010
80A20020
80A20030
80A20040
80A20050
80A20060
80A20070
80A20080
80A20090
80A20100
80A20110
80A20120
80A20130
80A20140
80A20150
80A20160
80A20170
80A20180
80A20190
80A20200
80A20210
80A20220
80A20230
80A20240
80A20250
80A20260
80A20270
80A20280
80A20290
80A20300
80A20310
80A20320
80A20330
80A20340
80A20350
80A20360
80A20370
80A20380
80A20390
80A20400
80A20410

1443 FUNCTION TEST

0E63 0 0042	DC	/0042	
0E64 0 8100	DC	/8100	1
0E65 0 0041	DC	/0041	
*			
0E66 0 0000	BLANK DC	/0000	
*			
0E67 0 3318	CSTEL DC	/3318	C Y
0E68 0 3323	DC	/3323	C L
0E69 0 3500	DC	/3500	E
0E6A 0 1213	DC	/1213	S T
0E6B 0 3531	DC	/3531	E A
0E6C 0 2300	DC	/2300	L
*			
0E6D 0 2739	DC	/2739	P I
0E6E 0 3322	DC	/3322	C K
0E6F 0 2014	DC	/2014	- U
0E70 0 2700	DC	/2700	P
*			
0E71 0 3429	DROP DC	/3429	O R
0E72 0 2627	DC	/2627	D P
*			
0E73 0 0009	CSE0B DC	/0009	9
0E74 0 000A	CSE09 DC	/000A	0
0E75 0 0001	OC	/0001	1
0E76 0 0002	DC	/0002	2
0E77 0 0003	OC	/0003	3
0E78 0 0004	DC	/0004	4
0E79 0 0005	DC	/0005	5
0E7A 0 0006	OC	/0006	6
0E7B 0 0007	DC	/0007	7
0E7C 0 0008	OC	/0008	8
0E7D 0 0009	DC	/0009	9
*			
0E7E 0 1626	WCCOR DC	/1626	W D
0E7F 0 2912	DC	/2912	R S
0E80 0 1300	DC	/1300	T
0E81 0 3331	OC	/3331	C A
0E82 0 1235	DC	/1235	S E
0E83 0 0033	DC	/0033	C
0E84 0 2629	DC	/2629	D R
0E85 0 3500	DC	/3500	E
*			
0E86 0 3100	WCCA OC	/3100	A
0E87 0 3200	WCCB DC	/3200	B
*			
0E88 0 2A2A	AWORK DC	/2A2A	# #
0E89 0 2A15	DC	/2A15	# V
0E8A 0 2A2A	DC	/2A2A	# #
0E8B 0 152A	OC	/152A	V #
0E8C 0 1515	DC	/1515	V V
0E8D 0 152A	DC	/152A	V #
0E8E 0 1515	DC	/1515	V V
0E8F 0 2A15	OC	/2A15	# V
*			
0E90 0 3838	BWDRK DC	/3838	H H
0E91 0 3807	DC	/3807	H 7
0E92 0 3838	DC	/3838	H H
0E93 0 0738	DC	/0738	7 H
0E94 0 0707	DC	/0707	7 7
0E95 0 0738	OC	/0738	7 H
0E96 0 0707	OC	/0707	7 7
0E97 0 3807	DC	/3807	H 7
*			
0E98 0 3525	EOT DC	/3525	E N
0E99 0 3400	OC	/3400	D
0E9A 0 2636	DC	/2636	O F
0E9B 0 0013	DC	/0013	T
0E9C 0 3512	DC	/3512	E S

BOA20420
BOA20430
BOA20440
BOA20450
BOA20460
BOA20470
BOA20480
BOA20490
BOA20500
BOA20510
BOA20520
BOA20530
BOA20540
BOA20550
BOA20560
BOA20570
BOA20580
BOA20590
BOA20600
BOA20610
BOA20620
BOA20630
BOA20640
BOA20650
BOA20660
BOA20670
BOA20680
BOA20690
BOA20700
BOA20710
BOA20720
BOA20730
BOA20740
BOA20750
BOA20760
BOA20770
BOA20780
BOA20790
BOA20800
BOA20810
BOA20820
BOA20830
BOA20840
BOA20850
BOA20860
BOA20870
BOA20880
BOA20890
BOA20900
BOA20910
BOA20920
BOA20930
BOA20940
BOA20950
BOA20960
BOA20970
BOA20980
BOA20990
BOA21000
BOA21010
BOA21020
BOA21030
BOA21040
BOA21050
BOA21060
BOA21070
BOA21080
BOA21090

1443 FUNCTION TEST

0E9D 0 133B	DC	/133B	T .
*			
* ALPHA			
0E9E 0 0000	DC	/0000	BLANK
0E9F 0 0102	DC	/0102	1 2
0EA0 0 0304	DC	/0304	3 4
0EA1 0 0506	DC	/0506	5 6
0EA2 0 0708	DC	/0708	7 B
0EA3 0 090A	DC	/090A	9 0
0EA4 0 0000	DC	/0000	BLANK
0EA5 0 0031	DC	/0031	A
0EA6 0 3233	DC	/3233	B C
0EA7 0 3435	DC	/3435	D E
0EA8 0 3637	DC	/3637	F G
0EA9 0 3839	DC	/3839	H I
0EAA 0 2122	DC	/2122	J K
0EAB 0 2324	DC	/2324	L M
0EAC 0 2526	DC	/2526	N D
0EAD 0 2728	DC	/2728	P Q
0EAE 0 2912	DC	/2912	R S
0EAF 0 1314	OC	/1314	T U
0EB0 0 1516	OC	/1516	V W
0EB1 0 1718	DC	/1718	X Y
0EB2 0 1900	DC	/1900	Z BLANK
0EB3 0 0000	DC	/0000	BLANK
0EB4 0 1030	DC	/1030	E AMP
0EB5 0 2011	DC	/2011	- /
0EB6 0 1A3A	OC	/1A3A	PCT LOS
0EB7 0 2A0B	DC	/2A0B	NOS #
0EB8 0 1B3B	DC	/1B3B	,
0EB9 0 2B0C	DC	/2B0C	\$ AT
0EBA 0 1C3C	DC	/1C3C	% □
0EBB 0 2C0D	DC	/2C0D	* APOSTROPHE
0EBC 0 1030	OC	/1D3D	UDR CNT
0EBD 0 2D0E	DC	/2D0E	EXC GTR
0EBE 0 1E3E	DC	/1E3E	COL LES
0EBF 0 2E0F	DC	/2E0F	SMI QST
0EC0 0 1F3F	OC	/1F3F	QTE DR
0EC1 0 2F00	DC	/2F00	NOT BLANK
*			
STRSS			
0EC2 0 3020	OC	/3020	E -
0EC3 0 0111	DC	/0111	1 /
0EC4 0 3121	DC	/3121	A J
0EC5 0 0212	OC	/0212	2 S
0EC6 0 3222	DC	/3222	B K
0EC7 0 0313	DC	/0313	3 T
0EC8 0 3323	DC	/3323	C L
0EC9 0 0414	DC	/0414	4 U
0ECA 0 3424	DC	/3424	D M
0ECB 0 0515	OC	/0515	5 V
0ECC 0 3525	DC	/3525	E N
0ECD 0 0616	DC	/0616	6 W
0ECE 0 3626	DC	/3626	F D
0ECF 0 0717	DC	/0717	7 X
0ED0 0 3727	OC	/3727	G P
0ED1 0 0818	DC	/0818	8 Y
0ED2 0 3828	OC	/3828	H Q
0ED3 0 0919	DC	/0919	9 Z
0ED4 0 3929	OC	/3929	I R
0E05 0 0A1A	DC	/0A1A	0 %
0ED6 0 3A2A	DC	/3A2A	□ #
0ED7 0 0B1B	DC	/0B1B	# ,
0ED8 0 3B2B	DC	/3B2B	. \$
0E09 0 0C1C	DC	/0C1C	, □
0EDA 0 3C2C	DC	/3C2C	□ *
0EDB 0 0D10	DC	/0D10	, &
*			
0E0C 0 333B	CHARC OC	/333B	C H

80A21100
80A21110
80A21120
80A21130
80A21140
80A21150
80A21160
80A21170
80A21180
80A21190
80A21200
80A21210
80A21220
80A21230
80A21240
80A21250
80A21260
80A21270
80A21280
80A21290
80A21300
80A21310
80A21320
80A21330
80A21340
80A21350
80A21360
80A21370
80A21380
80A21390
80A21400
80A21410
80A21420
80A21430
80A21440
80A21450
80A21460
80A21470
80A21480
80A21490
80A21500
80A21510
80A21520
80A21530
80A21540
80A21550
80A21560
80A21570
80A21580
80A21590
80A21600
80A21610
80A21620
80A21630
80A21640
80A21650
80A21660
80A21670
80A21680
80A21690
80A21700
80A21710
80A21720
80A21730
80A21740
80A21750
80A21760
80A21770

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196382
PAGE 17

1443 FUNCTION TEST

```
OEDD 0 3129      DC      /3129  A R
OEDE 0 3133      DC      /3133  A C
OEDF 0 1335      DC      /1335  T E
OEE0 0 2900      DC      /2900  R
OEE1 0 3326      DC      /3326  C D
OEE2 0 2427      OC      /2427  M P
OEE3 0 2339      DC      /2339  L I
OEE4 0 2435      OC      /2435  M E
OEE5 0 2513      DC      /2513  N T

*
OEE6 0 2935      REGIS OC    /2935  R E
OEE7 0 3739      DC      /3739  G I

*
OEE8 0 1213      DC      /1213  S T
OEE9 0 2931      DC      /2931  R A
OEEA 0 1339      DC      /1339  T I
OEE8 0 2625      DC      /2625  O N

*
OEEC 0 3838      AITCH DC    /3838  H H

*
OEED 0 1213      STRES DC    /1213  S T
OEEE 0 2935      OC      /2935  R E
OEEF 0 1212      DC      /1212  S S

*
OEF0 0 1222      SKAP  DC    /1222  S K
OEF1 0 3927      DC      /3927  I P
OEF2 0 0031      AFTER DC    /0031  A
OEF3 0 3613      OC      /3613  F T
OEF4 0 3529      DC      /3529  E R
OEF5 0 0027      DC      /0027  P
OEF6 0 2939      DC      /2939  R I
OEF7 0 2513      DC      /2513

*
OEF8 0 1222      SKIM  DC    /1222  SKIP IMMEDIATE
OEF9 0 3927      OC      /3927
OEF A 0 0039      OC      /0039
OEFB 0 2424      DC      /2424
OEF C 0 3534      DC      /3534
OEFD 0 3931      OC      /3931
OEFE 0 1335      DC      /1335

*
OEFF 0 3535      E      OC    /3535

*
OF00 0 1227      SPIM  OC    /1227  SPACE IMMEDIATE
OF01 0 3133      DC      /3133
OF02 0 3500      DC      /3500
OF03 0 3924      OC      /3924
OF04 0 2435      DC      /2435
OF05 0 3439      DC      /3439
OF06 0 3113      DC      /3113
OF07 0 3500      OC      /3500

*
OF08 0 3338      CNL   DC    /3338  CHANNEL
OF09 0 3125      OC      /3125
OF0A 0 2535      OC      /2535
OF0B 0 2300      OC      /2300
OF0C 0 0000      DC      /0000
OF0D 0 0000      DC      /0000

*
OF0E 0 1227      SPCC  DC    /1227  SPACE
OF0F 0 3133      DC      /3133
OF10 0 3500      OC      /3500
OF11 0 0000      DC      /0000
OF12 0 0000      DC      /0000
OF13 0 0000      OC      /0000

*
*
OF14 0093      BITS 8SS 147 1443 OUTPUT AREA
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196382
PAGE 17A

1443 FUNCTION TEST

```
OFA7 0 4480 012C
OFA9 1 07FF

OFAA 0000      8SS E 0
OFFD 0000      ORG  /7FE&PID
OFFD 0 0000    PEND OC 0
OFFE OFA7      ENO  PRCUS

NO STATEMENTS FLAGGED IN THE ABOVE ASSEMBLY
```

```
*
***** BEGIN ROUTINE.
PRCUS 8SI I BEGIN *
OC PIO
*****
* PATCH AREA
```

```
80A22460
80A22470
80A22480
80A22490
80A22500
80A22510
80A22520
80A22530
80A22540
80A22550
```

```
80A21780
80A21790
80A21800
80A21810
80A21820
80A21830
80A21840
80A21850
80A21860
80A21870
80A21880
80A21890
80A21900
80A21910
80A21920
80A21930
80A21940
80A21950
80A21960
80A21970
80A21980
80A21990
80A22000
80A22010
80A22020
80A22030
80A22040
80A22050
80A22060
80A22070
80A22080
80A22090
80A22100
80A22110
80A22120
80A22130
80A22140
80A22150
80A22160
80A22170
80A22180
80A22190
80A22200
80A22210
80A22220
80A22230
80A22240
80A22250
80A22260
80A22270
80A22280
80A22290
80A22300
80A22310
80A22320
80A22330
80A22340
80A22350
80A22360
80A22370
80A22380
80A22390
80A22400
80A22410
80A22420
80A22430
80A22440
80A22450
```

DATE 04NOV66 15JUN68 14NOV69 20MAR70
EC NO. 415233 411935 431319 431320PRG ID 080A-1
PAGE 17OATE 04NOV66 15JUN68 14NOV69 20MAR70
EC NO. 415233 411935 431319 431320PRG ID 080A-1
PAGE 17A

1443 FUNCTION TEST

AFTER 0EF2 0AF9
AGAIN 0894 0806 0807 08A7
AGIN1 0897 089A
AGIN2 089C 089F
AITCH 0EEC 0A52 0A5B
ALL 0B6B 08EC
ALPHA 0E9E 0A3B
AWORK 0E88 0A17
BAR 0814
BASIC 086A 08EB
BEGIN 012C 0FA7
BILK 0E4D 0965
BITS 0F14 085C 0912 0918 0933 0969 0A1B 0A3F 0A56 0A5B 0A7A 0A7D 0A9D 0AA0
0AB5 0AE7 0B23 0B43 0B4E 0B50 0B58 0B85 0B93 0B95 0B9D 0BCC 0BFD
0C28 0C2B 0C35 0C37 0C3A 0C3F 0C44 0C48 0C4A 0C4C 0CBD 0CC0 0CC3
0CD1 0CD7 0CED 0CFB
BLANK 0E66 08FF 0996 0C10
BLINE 0E49 095E
BLNCT 0995 098B 09B7
BWORK 0E90 0A2E
CHAN 0BAC 0B3F 0B48 0B4C 0B55 0B5D 0B61 0BDA
CHAN1 0BAF 0BD9
CHARC 0EDC 0A34
CKPTR 0D3A 0923 093C 0950 0979 09A6 09D4 0A02 0A72 0A90 0ADB 0B15 0BC6 0BEE
0C88 0CA1 0D49
CKPT1 0D3E 0D4E 0D5B
CKPT3 0D49 0D5A
CKPT7 0D4B 0D44
CKPT8 0D5B 0D4D
CKXFR 0D14 0976 09A3 09D1 09F6 0A6F 0A8D 0AD8 0B12 0BC3 0BEB 0C88 0D24
CKXF1 0D19 0D29 0D36
CKXF3 0D24 0D35
CKXF7 0D26 0D1F
CKXF8 0D36 0D28
CNL 0F08 0C1A
CNTRL 085A 08D7 094B 0AC4 0AE4 0AE6 0AFE 0B20 0B22 0B3B 0B6D 0B72 0BA4 0BCE
0BD0 0BFF 0C01 0C80 0C99
COMP 0810
CSE08 0E73 09C9
CSE09 0E74 09EE
CSTEL 0E67 09C2 09E2
CYCNT 0820 08E7 092D 0942 0956 096C 097F 098F 09B2 09DA 0A08 0A42 0A55 0A96
0AB8 0ACA 0AEC 0B04 0B29
08C6 08CB 0DFD 0E10 0E3B
DDEF1 0811 08C0 08C3
DDEF2 0812 08C0 08C3
DECX0 0CF7 0CF0
DEND 0E3F 08C7
DEND1 0E45 0E3F
DRAD 0DFD 08CF
DROP 0E71 09E7
DROPD 0DF3 08DE 090B 0A76 0C8D 0DC3 0E04
DRPAD 0E02 0DF9 0DFF
DRPED 0DFF 0DF6
DST 081E 081E 089C 08BA 08BC 08C0 08C6 08D5 08D6 08D7 08D8 0BD9 08DA 08DB
08DC 08DD 08E0 08E9 08EA 08EB 08EC 08ED 08F0 08F9 091A 091B 091C
0925 0928 094A 094B 0967 098A 098E 098F 09AD 09F8 09FB 09FE 0A00
0A19 0A3D 0A42 0A4D 0A54 0A55 0A60 0A64 0A66 0A67 0A68 0A7C 0A82
0A83 0A86 0A9F 0AB3 0AB8 0AC3 0AC4 0AC5 0AC6 0AC9 0ACA 0ACB 0AE4
0AE5 0AE6 0AEB 0AFD 0AFE 0AFF 0B00 0B03 0B04 0B05 0B20 0B21 0B22
0B27 0B28 0B3A 0B3B 0B40 0B56 0B57 0B6C 0B6D 0B71 0B72 0B92 0B9B
0B9C 0BA3 0BA4 0BB8 0BB9 0BBA 0BBE 0BC1 0BCE 0BCF 0BD0 0BF3 0BFF
0C00 0C01 0C12 0C13 0C27 0C2A 0C30 0C47 0C55 0C56 0C59 0C5C 0C60
0C6A 0C7F 0C80 0C96 0C97 0C9B 0C99 0C9A 0CAD 0CAE 0CAF 0CB0 0CB1
0D00 0D03 0D05 0D0D 0D0E 0D15 0D17 0D1B 0D1D 0D1E 0D21 0D2E 0D2F
0D31 0D32 0D3B 0D3C 0D40 0D42 0D43 0D46 0D53 0D54 0D56 0D57 0D97
0D98 0D9B 0DCB 0DD1 0DD2 0DD7 0DE1 0DE3 0DF8 0E02 0E13 0E1B 0E1D
0E2B 0E2F 0E31 0E34
DSWA 0846

1443 FUNCTION TEST

DSWB 084A
DSWC 084E 088F
DSW0 0852 0A00 0D32
DSWE 0856 0D57
DSW1 0822
DSW2 0826
DSW3 082A
DSW4 082E
DSW5 0832 0AC9 0AEB 0B03 0B27
DSW6 0836
DSW7 083A 0BAF 0BDF
DSW8 083E
DSW9 0842 09F8 09FB 09FE
DVA 0878 08D6 0E11
E 0EFF 0C25
EIGHT 0A21
EMESS 0DED 0DD9 0DDA 0DDB 0DDF 0DE7 0E42 0E45
END 012E 08C9 090D 0E47
ENDAD 0E3B 0801
ENDIT 0E2E 0808 0E37 0E3D
EOT 0E98 0904
EPARK 09BE 09BA
ERRBY 0DBC 0DE8
ERRIT 0DC2 0929 093E 0952 097B 09A8 0906 0A04 0A92 0ADD 0B17 0BC8 0BF9 0C68
0CA3 0DC6 0DD5 0E24 0E41
ERROR 0130 0DE5
ERR1 0DC8 0DEA
ERR2 0DCB 0DD0
ERR4 0DD7 0DCE
ERR5 0DE3 0DBC 0E44
FIVE2 0AB8 0AB7
FORMS 0C95 0940 0AD2 0B0C 0B6F 0BB5 0BE5 0C82 0CAA
GET 0CE9 0CE4 0CF8
GETAD 0E10 08CD 0D9F 0DC4 0DF4 0E07 0E35
GETOE 0E06 08D3 0C57 0E15
GETRN 0E0D 0E17
GDTIT 0E13 0E09
HALT 0E1A 0DB6 0E1F 0E2C
HALT1 0E18 0E26
HALT9 0E29 0E22
HDNG 0C7B 0906 0960 098C 09C4 09E9 0A12 0A29 0A36 0A4B 0AAC 0AC1 0AFB 0B33
0C93
IMSP1 0874 0AC3
INTRE 088E 0881 0889
INTRP 0879 0892
INTRR 0890 088D
INTRX 0892 0885
INTR1 0886 087C
INTSW 0877 0891 0E0B
KA000 0D92 0D66
KEEP 086C 08A0 0A64 0A82 0C6A 0DF8
KE000 0DEC 0DDE
K000C 086E 0D98
K0100 0864 0880 0888 08D8 0AE5 0B21 0B3A 0B40 0B56 0B92 0B9B 0BCF 0C00 0C96
0CAD 0D15 0D1E 0D2F 0D31 0D43 0D54 0D56
K0200 0865 08DA
K0400 0863 08D5 0C55 0D3B
LAST 08B9 086B
LOG 012F 0DA3
LOGBY 0DB9 0DA6
LOGIT 0D93 092B 0940 0954 097D 09AA 09D8 0A06 0A94 0ADF 0B19 0BCA 0BFB 0C6D
0CA5 0DA1 0DB7
LOG1 0DA3 0DB2 0DB9
LOPGO 0DBE 0C79 0D38 0D5D 0DBB 0E01 0E19 0E28
LXR1 0CE5 0CF9
LXR2 0CDF 0CDE
MASK 0B69 08ED
MLSCF 0809 08A3 0DBE

F
L

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196382
PAGE 19

1443 FUNCTION TEST

```
MOVE 0C2F 0ACC 0B06 0B1E 0BD1 0BD2 0BD3 0BD4 0C02 0C03 0C04 0C05 0C4E
MOVE4 0C47 0C3D
MOVE5 0C4C 0C42
MOVE6 0C4E 0C46
MSGAR 0D72 0897 08E2 0C8F 0D60 0D94 0DA5 0DAA 0DAF 0D83
ONE 0868 08DC 091A 0AC5 0AFF 0B57 0B9C 0C2A
ONECH 086D 0A7C 0A9F
ONLIN 080F 0A61 0A74
PACNT 099B 0992 09AC 09AE 09B9
PAR 0E54 0987
PARK 0E58 0990 098E
PCON 08E0 0930 0945 0959 0982 09B5 09DD 0A0B 0A99 0AEF 0B2C 0862 0BAA 0DD3
PEND 0FFD 0808
PID 07FF 0FA9
PRCUS 0FA7 0FFE
PRDSW 0860 0887 088C 0C97 0CAE 0D42 0D46
PRINT 0CAC 0920 0939 0973 09A0 09CE 09F3 0A6C 0A8A 0AD5 0B0F 0B8C 0BE8 0C85
PTRDY 0C50 0909 091E 0936 0948 0971 099E 09CC 09F1 0A6A 0A88 0ACF 0B09 086A
      08B2 0BE2 0BF1 0C75 0C7D 0CA8
PTRY1 0C55 0C6F
PTRY2 0C5C 0C77
PTRY3 0C5E 0C54
PTRY4 0C70 0C51 0C52 0C64
PTRY9 0C77 0C68
PUT 0CE8 0CD3 0CD9 0CDA
QLOG 0D5E 0BF5 0C5A 0C72 0C9C 0CB3 0D22 0D47 0D70
QLOG1 0D60 08E4 0C91 0D62 0D96
QLOG2 0D6E 0D5F 0D65 0D6A 0D6C
QLUP 0DAA 0DA7 0DB0 0DB5
QLUP1 0DB3 0D99 0D9D 0DAD
RAD 0801 08F9
REGIS 0EE6 0A49
RELDV 0132 0DFB 0E39
REQDV 0131 0E0D
REXIT 0E17 0E0F
RID 0800 08A5 08F0 08F1 08F5 0C12 0D97
ROTA 0CB9 096E 0AA4 0CCA
ROTA1 0CC0 0CC7
ROTA2 0CC8 0CBA
RPCNT 081F 0ACB 0AE1 0B05 0B1B 0B28 0BAD 0BD7 0BDD 0C07
RSTWC 0CFA 0CD5
RTABL 08A9 086B 08F7 08FA
RTZ 090F 08A9 092F
RTZZZ 08FC 08B9
RTZ1 0912 0915
RTOA 0A46 08B3
RTOAA 0A60 0AA6
RTOAB 0A7A 0A80
RTOAC 0A9D 0AA3
RTOAD 0A9B 0A98
RTOAI 0A51 0A4E
RTOAJ 0A5E 0A5A
RTOB 0AA7 08B4
RTOC 0ABC 08B5
RTOC3 0ACB 0AE3 0AEE
RTOD 0AF1 08B6
RTOD3 0B05 0B1D
RTOD4 0B08 0B2B
RTOE 0B2E 08B7
RTOF 0B64 08B8
RT01 0932 08AA
RT01A 0935 0944
RT02 0947 08AB 0958
RT03 095B 08AC
RT03A 096E 0981 0A1D 0A43 0AB9
RT04 0984 08AD
RT04C 09B7 09B4
```

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM

PART NO. 2196382
PAGE 19A

1443 FUNCTION TEST

```
RT05 09BF 08AE
RT05A 09CB 09DC
RT06 09DF 08AF
RT06A 09F0 0A0A
RT07 0A0D 08B0
RT07B 0A19 0A30
RT08 0A1F 08B1
RT09 0A31 08B2
RT413 0990 09BD
SBANA 0CFF 0BF7 0C61 0C9E 0CB5 0D0A 0D12 0D23 0D30 0D48 0D55
SBANQ 0866 0D03 0D05 0D0E
SE8IT 0CCC 08FC 0901 095B 0962 0984 0993 0998 098F 09C6 09DF 09E4 09EB 0A0D
      0A14 0A1F 0A24 0A2B 0A31 0A38 0A46 0A4F 0AA7 0AAE 0ABC 0AF1 0AF6
      0B2E 0B64 0C0D 0C17 0C1D 0C22 0CCF
SEBOT 0CF1 0CCD 0CCE
SENSD 0861 087A 08DD 0BF3 0D2E 0D53
SENSO 085F 08DB 0C59 0C60 0C9A 0CB1
SETIT 0C0C 0AC7 0B01 0B35 0B40 0B77 0B7F 0C20
SETPA 0993 09B1 09BB
SETT1 0C1D 0C15
SETT2 0C22 0C1C
SHAN 0BDC 0B7E 0B89 0B8D 0B91 0B9A 0BA2 0BA8 0C0A
SHAN1 0BDF 0C09
SIXTY 0DF2 0DDC
SIX8 0A45 0A41
SIZE 0813 0967 098E 0A19 0A3D 0A4D 0A54 0AB3
SKAP 0EF0 0B67
SKIM 0EF8 0B31
SLASH 0875 0C27 0C47
SPAC1 086F 094A
SPAC2 0870
SPAC3 0871 0B6C 0C7F
SPCC 0F0E 0C20
SPIM 0F00 0ABF 0AF4
START 012D 0DA8 0DC0
STARX 08BA 08A1
STAR1 08C6 08BE 08C1
STAR2 08C0 08C5
STEP 0876 0AC6 0AE9 0B00 0B25 0B38 0B7A 0B82 0C30
STOLX 0CDE 0CFE
STRES 0EED 0AAA
STRSS 0EC2 0AB1
SWCMP 0862 08EA 0DD2
SWO 0802 0D9B 0E1D 0E2B 0E31 0E34
SW1 0803 08E9 0DD1
SW2 0804 08BC
SW3 0805
TERM 080A 098A 09AD 0A60 0A66 0BB8 0C13 0CE2 0D0D 0DFE 0E12 0E3C
WACNT 0821 0C56 0C66 0D17 0D26 0D3C 0D4B
WCCA 0E86
WCCB 0E87 0A27
WCCOR 0E7E 0A10 0A22
WRITE 085C 08D9 091B 091C 0925 0928 0A67 0A68 0A83 0A86 0BB9 0BBA 0BBE 0BC1
      0CB0
WRSK1 0873 0B71 0BA3
WRSP1 0872 0AFD
XFD SW 085E 087F 0884 0C98 0CAF 0D1D 0D21
END OF ASSEMBLY
```

----- LAST PAGE -----

DATE 04NOV66 15JUN68 14NOV69 20MAR70
EC NO. 415233 411935 431319 431320

PROG ID 080A-1
PAGE 19

DATE 04NOV66 15JUN68 14NOV69 20MAR70
EC NO. 415233 411935 431319 431320

PROG ID 080A-1
PAGE 19A

